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Railway Age

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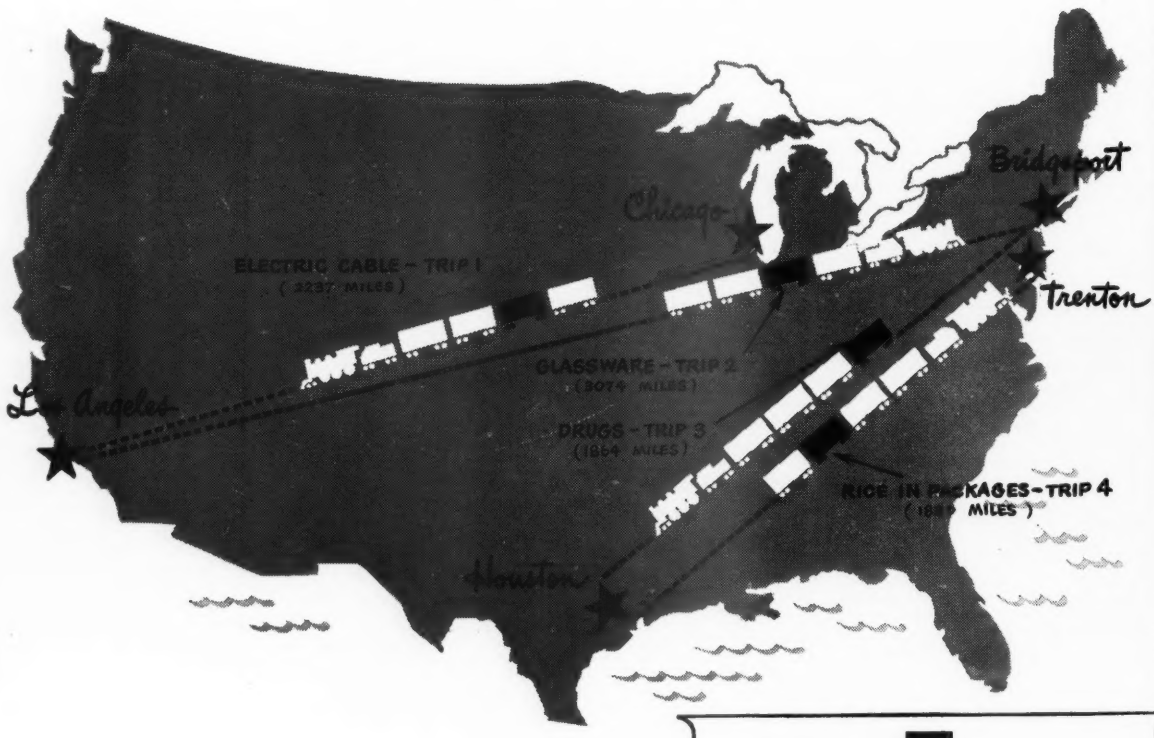

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Published weekly by Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelphia, Pa. Entered as second class matter, January 4, 1933, at the Post Office at Philadelphia, Pa., under the act of March 3, 1879. Subscription price $6.00 for one year U. S. and Canada. Single copies, 25 cents each. Vol. 116, No. 26.

Railway Age

With which are incorporated the Railway Review, the Railroad Gazette and the Railway Age-Gazette. Name registered in U. S. Patent Office

Vol. 116 June 24, 1944 No. 26

PUBLISHED EACH SATURDAY BY THE SIMMONS-BOARDMAN PUBLISHING CORPORATION, 1309 NOBLE STREET, PHILADELPHIA 23, PA., WITH EDITORIAL AND EXECUTIVE OFFICES AT 30 CHURCH STREET, NEW YORK 7, N. Y. AND 105 W. ADAMS STREET CHICAGO 3, ILL.

WASHINGTON 4, D. C.; 1081 NATIONAL PRESS BUILDING. CLEVELAND 13: TERMINAL TOWER SEATTLE 1: 1033 HENRY BUILDING, SAN FRANCISCO 4: 300 MONTGOMERY STREET, ROOMS 805-806. LOS ANGELES 14: 530 WEST 6th STREET.

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RAILWAY AGE IS A MEMBER OF ASSOCIATED BUSINESS PAPERS (A. B. P.) AND AUDIT BUREAU OF CIRCULATION (A. B. C.).

SUBSCRIPTIONS, INCLUDING 52 REGULAR WEEKLY ISSUES, AND SPECIAL DAILY EDITIONS PUBLISHED FROM TIME TO TIME IN NEW YORK OR IN PLACES OTHER THAN NEW YORK, PAYABLE IN ADVANCE AND POSTAGE FREE. UNITED STATES, U. S. POSSESSIONS AND CANADA: 1 YEAR $6.00; 2 YEARS, $10.00; FOREIGN COUNTRIES, NOT INCLUDING DAILY EDITIONS: 1 YEAR, $8.00; 2 YEARS, $14.00. SINGLE COPIES, 25 CENTS EACH. H. E. McCANDLESS, CIRCULATION MANAGER, 30 CHURCH STREET, NEW YORK 7.

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Katy Revivified for War Traffic ***1199***

$19 million property rehabilitation program, involving "almost revolutionary" changes in condition of the road, locomotives, rolling stock, and fixed facilities, has brought the M-K-T Lines abreast of today's exacting demands and gives them a favorable vantage for the postwar period.

Employees as Railroad Spokesmen ***1204***

Herein is told how one railroad has developed a successful program for instructing its employees in public relations—a heretofore "meagerly explored" opportunity for kindling customer good will.

Micro-wave Radio in Yard Service ***1210***

Rock Island opens railroad-owned radio station for train operation, using micro-wave frequencies and frequency modulation—emergency equipment shown.

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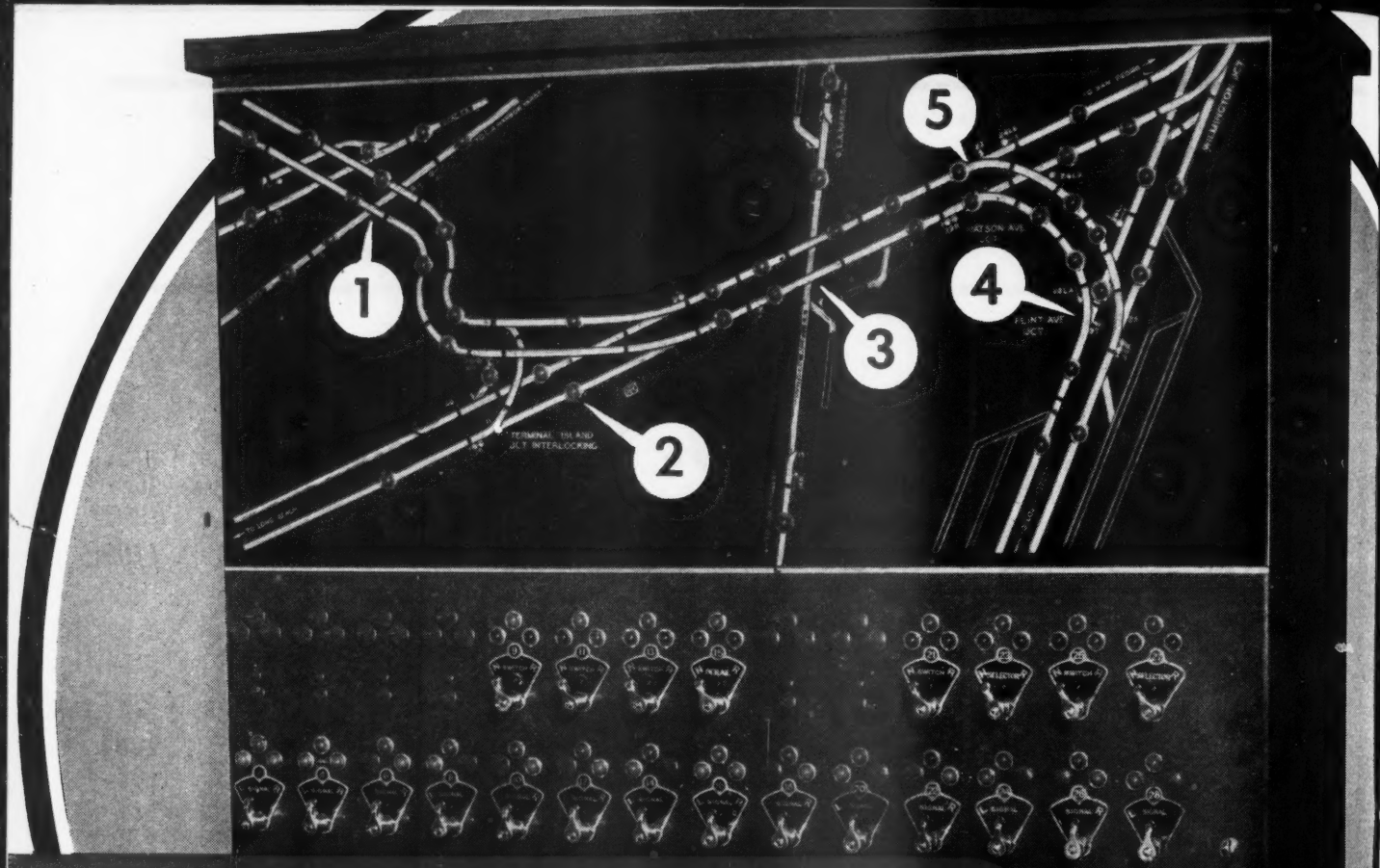
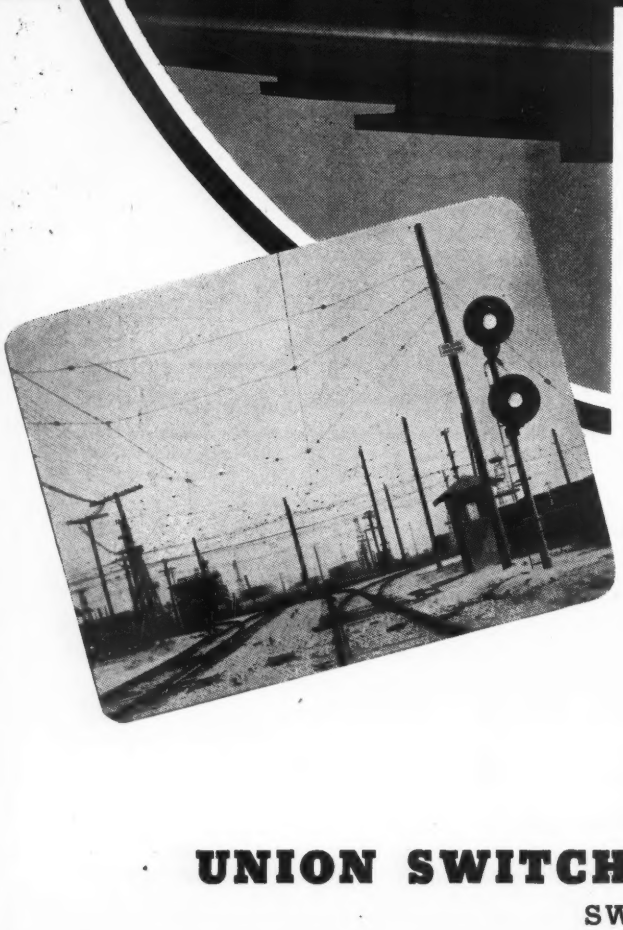


5 Interlockings in 1



THE adaptability of the "Union" Unit-Lever Relay Interlocking is forcibly illustrated by a new installation which embraces an area a mile square. Only a few years ago, this wide-spread layout would have comprised five separate interlockings; today all functions are economically controlled by one compact machine.

Location of trains, and position of switches and signals are conveniently indicated by the track model and lever lights. Complete information for the proper direction of trains is continuously displayed, and routes are speedily and safely established by movement of the miniature levers.

Since all junctions and crossings are controlled by one operator, a high degree of efficiency in the movement of trains through the entire area is accomplished. The many advantages of "Union" Unit-Lever Relay Interlocking are used in this case to safely expedite the transit of war workers from a large city to a vital war industry.

UNION SWITCH & SIGNAL COMPANY

SWISSVALE, PA.

The Week at a Glance

ANTI-TRUST AD ABSURDUM: The railroads are minutely regulated as to their pricing practices by the Interstate Commerce Act, precisely because they are one of those peculiar industries where unrestricted competition has been found by experience to produce results contrary to the public interest. In spite of this obvious situation, zealots in the Justice Department are taking advantage of the failure of the anti-trust acts specifically to exempt regulated aspects of railroading from their prohibitions, and are proceeding against the carriers exactly as if they were not regulated at all. The leading editorial herein discusses the incongruity of the Justice Department's position—exposing the impossibility of controlling railway rates both by regulation and by unbridled competition, and reaching the conclusion that socially-harmful demoralization will ensue unless legal action is made to accord with facts.

●

TRUCK "BARRIERS": A committee of New York's Commerce & Industry Association has been doing some "post-warring," and, among its proposals for a brave new world, it repeats the stereotyped anathema against alleged interstate "barriers" to trucks. Just what do the long-haul truckers deem a "barrier"? They consider it a "barrier" that one state has limitations on magnitude any more restrictive than any other state. In other words, they will be inveighing against "barriers" as long as the maximum size permitted anywhere is not permitted everywhere. They also cry "Barrier!" when any state asks visiting commercial vehicles kindly to contribute something to the costs of its highways. As an editorial herein observes, so long as business men insist on getting taxpayers' help in hauling their freight, they are in a mighty weak position to persuade farmers and organized labor to relinquish the political favors they enjoy.

●

SUPERVISION & SAFETY: A review of the present status of avoidable casualties on the railroads, and the steps currently proving most effective in diminishing them, appears in a report (page 1206) of the discussion at the recent Kansas City session of the Central States Safety Congress. How motion pictures may be used to best advantage to save lives and limbs was one timely topic on which helpful suggestions are proferred. The necessity of genuine primacy of safety in management's interests was dwelt upon with considerable emphasis. If the supervision wants a railroad to operate safely, and will constantly prove that fact by intelligent action, employees will respond—just as they will respond to leadership which, by its action, shows little concern for safety.

●

EMPLOYEES RR SPOKESMEN: New York Central Superintendent Borntrager at Albany, as committee chairman, presented to the meeting of the superintendents' association last month, a report dealing with the education of employees to make them effective representatives of their railroad with the public. An article in this issue (page 1204) gives the substance of Superintendent Borntrager's statement. Here is no theoretical discussion of general principles, but a working blueprint of a practical training program in successful and rapidly-expanding operation. Basic to this effective educational device is the fact that students are not herded in and "told." Instead, the instructor serves rather as an adept and helpful chairman. The things employees need to know on the subject are developed by discussion from the employees' own experience, common-sense, and good-will. We are going to have more to report on this encouraging development within the next week or two.

●

KATY'S INVIGORATION: The management of the M-K-T has been "going to town" in a systematic, system-wide program of physical rehabilitation of the property—an undertaking which has gone a long way, having been prosecuted energetically since '41. Outlays for preservation of the carrier's physical health were distressingly meager in the '30's—and, without vigorous restorative treatment, current levels of war traffic would not be moving; but rehabilitation required by the military load will yield results also in peace. An illustrated article herein relates in detail the interesting and heartening steps (especially in roadway and structures) which are being taken to make this road a source of growing satisfaction to its owners, its patrons, and its personnel.

●

ELECTRONICS PROGRESS: In the news pages a report appears of the Santa Fe's cross-country (Bakersfield to Chicago) freight train test run, in which constant intercommunication between head and rear ends was maintained by means of ultra-high-frequency radio. A feature article describes and illustrates the Rock Island's experiments with radio of the same genus in yard-office-to-locomotive intercommunication at Blue Island, and briefly relates a test run with this equipment on a freight train. Again in the news pages, a letter to the Senate's "Kilgore Committee" by W. R. Triem, P.R.R. general superintendent of telegraph, is reported—in which the railroad's widespread investigations into improved methods are reviewed, with a protest at the "destructive and demoralizing assault" which some politicians have made on the railroads, quite without justification, for alleged lack of zeal for technological improvements.

●

OUT IN BENGAL: Some pictures and descriptive text giving an idea of what kind of railroading our Army railroaders are up against in India are presented on page 1208. The military importance of the line can be estimated from the fact that it is the principal supply route to the foot of "the Hump" and to Northern Burma. Operating difficulties include a change in gage and an ornery river to cross on a car ferry. But the Americans have made it click—40 per cent increase in performance in the first month of their operation.

DIESEL TRAINING: One reason why the Baltimore & Ohio is experiencing such a satisfying showing with its Diesel-electric power—in the opinion of mechanical-department officers—is the convenient and effective instruction which it affords to employees who have to do with these locomotives. An illustrated article herein describes the company's Diesel instruction car—how it is equipped, and methods used in teaching adept equitation with this modern iron horse.

●

NEW NMB MEMBER: While the sirs and brothers were disputing with each other on the comparative qualifications of Dr. I. L. Sharfman and Frank M. Swacker as successor to Dr. Leiserson on the National Mediation Board, President Roosevelt named Frank P. Douglass, sometime aspirant to the governorship of Oklahoma, to the post. Mr. Douglass is well remembered by those who followed with amazement the decisions handed down in the Thirties by some of the referees appointed to settle cases for the National Railroad Adjustment Board. Mr. Douglass was one of these referees and some of his decisions fell in the category which, at length, brought nation-wide notoriety to this tribunal.

●

ARGUMENT ON RATES: Oral argument on the 28300 and 28310 rate cases progressed this week on its wordy way—while Georgia's governor tried to shoo-fly the Commission and get "equalization" of rates directly from the Supreme Court. In the report on the argument in our news pages, some of the most pointed discussion—as far as rate-making principles are concerned—was directed at l.c.l. rates. Ex-Railroader John Turney, doing battle for the long-haul truckers, wants railroad "costs" built up to a figure which would persuade the Commission to declare the carriers out of bounds on this traffic, turning it all over to the trucks. Lube Orr, counsel for Kentucky, characterized this truckers' contention as "a high-ceilinged tent for the trucks to go to sleep under at the expense of the rail lines."

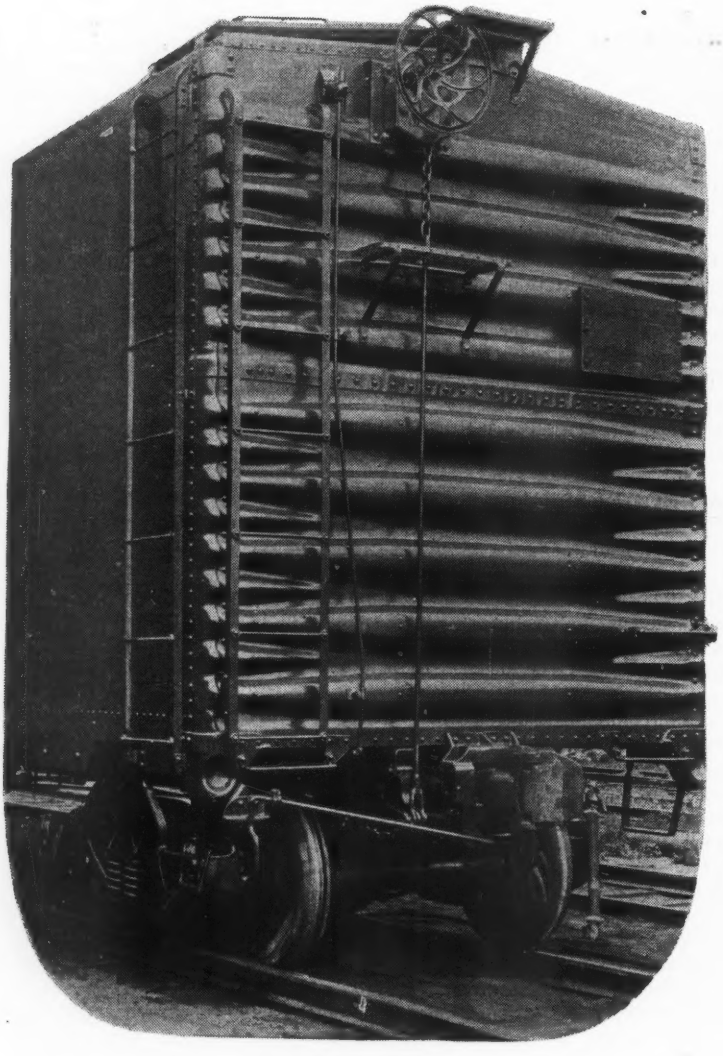
●

NEGRO ADVANCEMENT: Some southern senators have tried unsuccessfully to clip from the 1945 War Agencies' appropriation bill the $500,000 sought by President Roosevelt for his so-called "Fair Employment Practice Committee"—i.e., the agency whose assignment it is to exert pressure upon employers who discriminate in promotions and otherwise against negroes. Malcolmn Ross, head of this committee, in a speech last Sunday said that it had had "cases" against 23 railroads. Of this number 9 are "seeking ways to remedy discrimination" while 14 have ignored the committee's decrees, and Mr. Ross has turned them in to his boss. As a result of F. E. P. C.'s activities, Mr. Ross asserted, "negroes who worked as helpers are now machinists," waiters have become stewards. Mr. Ross did not report what assistance he has had from the railway unions in his efforts to uplift the status of our colored brethren.

DREADNAUGHT ENDS

WITH ROUND CORNERS

IN COMBINATION WITH W-SECTION CORNER POSTS



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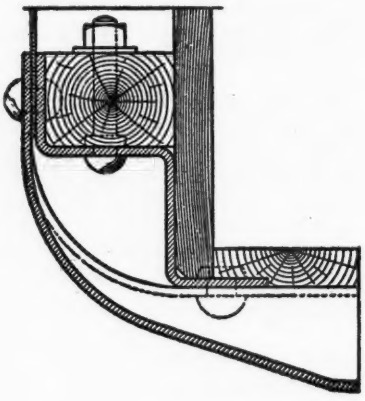

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RAILWAY AGE

Anti-Trust Act Versus Interstate Commerce Act

Congress should pass legislation making the Sherman anti-trust act inapplicable to the railways, if it does not want to see broken down the present system of regulating the railways under the Interstate Commerce Act. The Department of Justice has merely suspended during the war activities it recently began under the anti-trust act to compel forms of railway competition wholly incompatible with the objectives of the Interstate Commerce Act.

Among other things, the Interstate Commerce Act requires the Commission to enforce its provisions; prohibits unfair discriminations in rates between communities and shippers; empowers the Commission to suspend all rates proposed by the carriers, and, after hearings, to fix maximum or minimum rates or both; and directs that the Commission, "in the exercise of its power to prescribe just and reasonable rates, shall give due consideration . . . to the effects of rates on the movement of traffic . . .; to the need, in the public interest, of adequate and efficient railway transportation at the lowest cost consistent with the furnishing of such service; and to the need of revenues sufficient to enable the carriers, under honest, economical and efficient management, to provide such service."

How can rates be determined both by competition between the railways and in accordance with such provisions as those quoted? And yet the Department of Justice charges that non-competitive methods of submitting rates to the Commission that the railways have followed for years with the Commission's full knowledge violate the anti-trust act.

Changes in rates are usually proposed by agreement of the railways concerned, after joint conferences with the shippers especially concerned, and submitted to the Commission in joint tariffs; and any change proposed by the railways can be prevented by the Commission. The only alternative method would be for each individual railway to confer separately with the shippers, and then file with the Commission in separate tariffs proposed rates that would be sure to be different from those proposed by any other railway.

To confer with each individual railway would greatly increase the work that shippers now have to do in negotiating with the railways regarding rates. And for each individual railway, without conference with other railways, to file proposed changes in rates with the Commission in separate instead of joint tariffs, would make it necessary for the Commission either (1) to authorize different rates to be charged for the same service by each railway concerned, or (2) to perform the herculean and virtually impossible task of scrutinizing the almost innumerable different rates that would be proposed by the different railways and to try to harmonize them.

If the rates were not harmonized, as they probably could not be, the entire rate structure would become chaotic; the unfair discriminations between competing shippers and communities, which it always has been the principal purpose of the Interstate Commerce Act to prevent, would become grosser and more numerous than they ever were; and nobody could anticipate, as intended by the Interstate Commerce Act, the effects of rates on the movement of traffic or on railway earnings.

The plain purpose of the anti-trust act is to enforce competition in industries not subjected to such regulation as the railways are, and the prices and practices of which it is believed should be regulated

Efficiency FOR VICTORY

principally or solely by competition. The plain purpose of the Interstate Commerce Act is to have railway rates determined, not by competition, but by the Interstate Commerce Commission in accordance with certain standards established by law; and it is obviously impossible to have them determined both ways.

There is still, always will be, and always should be competition in service by the railways. But even in service there must be co-operation between them; for without such co-operation it would be impossible for them to serve the public efficiently at any time; and without it they would have found it utterly impossible to handle the volume of traffic they have handled during the present war. There is some regulation of service by the Commission already; and if there should be more of such regulation, it should be by the Commission under the Interstate Commerce Act, not by the Department of Justice under the anti-trust act.

Renewal by the Department of Justice of undiscriminating efforts to enforce unrestricted competition in railway rates and service would compel abandonment of methods found necessary by both the railways and the Commission to give effect to the Interstate Commerce Act, and thereby cause uncertainty and demoralization that could do nothing but harm to the railways, their customers and the public.

Unpractised Preaching

In their oratorical and "resolutionizing" campaign in behalf of the principles of free enterprise, the spokesmen for organized business and industry repeatedly admonish agriculture and labor to sacrifice political gifts in the sacred name of principle—while they themselves hang on for dear life to similar favors, no less contrary to free enterprise principles than those which they reprehend in others.

Specific mention was made in these pages (April 29 and May 13 issues) of the inconsistent attitude of the National Association of Manufacturers and the Chamber of Commerce of the United States in their complacency at the growth of socialism in transportation, as contrasted with the righteous indignation which they simulate at the invasion of socialism into other segments of the economy. Now, in similar vein, comes the Post-War Planning Committee of the Commerce & Industry Association of New York—burning with zeal to purge all elements of the economy, except transportation, of socialism. It wants Congress to "stop the expansion of government into the field of private enterprise" (omitting to mention transportation, of course); it hopes that "patriotic and far-seeing union labor leaders" will not object too much to the curbing by legislation of some of present union irresponsibility; it finds that "the farmers of the United States as a whole are a wonderful body of men" and ought to be willing to forego the costly political handouts they have been getting.

In other words, these exhorters want an end to all incursions of socialization into the economy except those in transportation which directly benefit some branches of business. Not a word do they say in opposition to the St. Lawrence Seaway; not a word against the $500 million bill for post-war river improvements; not a word of objection to the bill to spend $1½ to $3 billion of federal money on post-war superhighways. In fact, the only recommendation these distinguished preachers of free enterprise have to make on transportation is one which would have the indirect effect of *increasing the contribution by taxpayers* to commercial use of the highways—i.e., further socialization of transport costs.

The committee's recommendation on this subject is the stereotyped objection to "interstate trade barriers," allegedly hampering arbitrarily the movement of trucks. The long-distance truck operators interpret as a "barrier" any provision that they pay road-use fees in any state except where trucks are registered; and they also deem it a "barrier" that any state has limitations on truck size and weight which are more restrictive than another's. To remove "barriers," as thus defined, would be an invitation to register all trucks in the state with the lowest license fees and the most "liberal" limitations as to size—and to let such trucks (weighing over 50 tons and some 65 ft. long) range all over the country, paying nothing whatever to the states whose highways they *actually* use.

Ralph Hendershot, financial editor of the New York World-Telegram, has made the following comment on the recommendations of this committee:

"The report these men have made is rendered less effective because of their failure to suggest such housecleaning as may be necessary in their own homes. . . . We suggest that this committee take time off during the next few months to locate some of the weak spots in their own armor in the hope that, once recognized, correction will follow."

Tempting as it is to business cupidity to share its shipping costs with general taxpayers—instead of having waterways, highways, and air transport facilities financed exclusively by users' contributions—such political donation to the coffers of business will be dearly bought if it brings on socialization of all transportation; for socialization of all transportation would be a long trek toward socialization of the entire economy.

Stabilized Crosstie Buying

Next to lumber, crosstie procurement is probably the most perplexing problem that now faces the purchasing officers of many railways. On March 31 of this year the Class I roads had approximately 44,600,000 crossties on hand. Included in this total were treated ties for this year's renewal program, seasoned and partially seasoned stock that will be ready for treatment and insertion in tracks within a few weeks or months, and "green" ties definitely earmarked for 1945 treatment and use.

On the face of it, the March inventory figure represents almost a year's supply based upon last year's insertions by Class I roads and the average annual renewals of 44,800,000 for the 13-year period 1931 to 1943, inclusive. Yet this total is a mere 59 per cent

of renewals in the six-year period ending with 1930. Moreover, renewals in 1943 were only 2,616,000, or 5.4 per cent less than in 1942.

The situation is even more complicated than appears on the surface. The general condition is not the normal situation for all roads, for individual inventories are not correlated directly and proportionately to the mileage of maintained tracks and traffic density. Some roads, with commendable foresight and well-established long-range buying policies, are now in enviable positions, with adequate supplies of crossties for the 1944 renewal programs, with 1944 production going into stocks for seasoning prior to treatment and use in 1945. Other roads are definitely among the "have-nots," and are being forced to devise many expedients.

A procurement officer of one of the roads in the "haves" category, while discussing the situation, explained his favorable position by outlining his buying policy. This road has been a consistent buyer of ties, ready to accept delivery along its lines as he expressed it, "at any time of day or night, for years," and no attempt has been made to "play the market." As a result of buying ties consistently day-in and day-out, every month of the year, and thus encouraging production, this road has established a reputation as a consistent buyer, and apparently at prices that have allowed producers a fair profit.

Tie production along the right-of-way of this road recently has been restricted severely by the lack of manpower and other reasons; nevertheless its tie situation is still good. Its tie renewal programs have been closely integrated with buying policies over a long period. Today, despite restricted production, an adequate supply of ties is available for this year's renewals, and the general condition of the road's ties in track is of a high order that will allow a slight reduction in the normal number of ties programmed for 1945 renewals without any appreciable lowering of track standards.

Such a well-conceived and wisely-pursued long-range crosstie purchasing policy pays large dividends. Its advantages include assurances of supply and quality that make for ultimate crosstie economy.

Construction's Status Is Changing Constantly

War Production Board controls on practically all classes of construction still hold, and, accordingly, much railway and other construction must be held in abeyance. Certain types of railway construction, however, must be carried on, and to proceed with these conforms with the purpose of W. P. B. material controls, which is to route available construction materials to those projects most essential to the war effort.

Many of the fundamentals of W. P. B. control have not changed, and the following questions are still asked. Is the project essential to the war effort? Would postponement of construction be detrimental to the war effort? Is it impracticable to rent or convert existing facilities for the purpose in mind? Will the project result in duplication or unnecessary expansion of existing plants or facilities now under construction or about to be constructed? Have all possible economies in materials been incorporated in the projects? Has the project been designed of the simplest type, sufficient only to meet war requirements?

Furthermore, to secure the approval of any project it must be evident that sufficient labor and materials

An Ancient Stratagem — But It Still Works

are available to build it; that adequate public utilities services are on hand to serve it without costly expansions; that machine tools and other accessory equipment are to be had; and that labor can be found to man it—with adequate housing for such labor.

In respect to such requirements, the construction picture has not changed much. Not all proposed railway construction can meet these requirements fully, but many types of such construction can meet them just as fully and urgently as some classes of military and outright "war production" projects. The fact of this assertion is demonstrated by the large amount of railway construction that the W. P. B. has authorized.

While such overall phases have undergone little change, the situation with respect to specific materials has altered widely and continues to develop new aspects. A year ago railway construction forces were being admonished to employ timber or other construction for steel. Today, the situation is reversed—frame construction, particularly that calling for common grades of dimension lumber, is practically prohibited. Reinforcing steel, which was one of the tight materials a year or more ago, is today readily available, and, in this one respect, is broadening the field of concrete design. On the other hand, the highly restricted use of lumber for concrete formwork is limiting the relief that might otherwise be obtained through this type of construction.

Under such circumstances engineers find it a practical necessity to execute their design and construction projects with the greatest regard for the *immediate* material situation. In their efforts, they are fortunate that so many members of the War Production Board are showing increased understanding of the needs of the railways in their endeavors to help the war effort; and a significant readiness to heed the recommendations of railway engineers regarding the necessity for specific projects and for the materials specified for use in them.

Smoke Prevention

An unusually constructive meeting of the Smoke Prevention Association was held in Detroit, Mich., on June 6-9, as indicated by a brief news item and review of the program in the *Railway Age* of June 17. Why, in wartime, some may ask, was it decided to hold another meeting of this association, which has for years been giving attention to such a routine matter as minimizing smoke? The answer is that, entirely aside from any consideration of aesthetics or community cleanliness, visible smoke is an indication of inefficient combustion, and therefore of waste of fuel which should not be tolerated in peacetime and which is a saboteur for the enemy in wartime. The lend-lease commitments alone of this country for shipment of fuel oil and bituminous coal abroad are such that every possible pound must be conserved for U. S. industrial and domestic use.

If further evidence of the need for smoke prevention in wartime is required, it is afforded by the fact that, throughout the entire emergency and at the present time, Great Britain is continuing its smoke abatement efforts. The suggestion has been advanced, and apparently has considerable merit, that smoke observations might well be made at selected spots on a national scale by the U. S. Weather Bureau and thus make information available which could be used in improving smoke conditions.

Smoke represents not only wasted fuel, but is a blight on local communities to such an exent that modern thought attributes the development of slum areas in large industrial cities, in some degree at least, to bad smoke conditions which people will tolerate only as long as they have to and until they are financially in a position to move elsewhere.

Railroads make only a relatively small percentage of the total smoke emanating from any large city, but steam locomotive smoke helps swell the total; it is a larger percentage this year than last owing to the use of poorer grades of fuel and of new men not so well-trained in preventive measures. The extra smoke not only represents a fuel loss to the railroads, but arouses a definitely adverse public reaction.

Our Circulation Volume Is "Frozen"

The war shortage of paper has forced conservation measures upon all publishers, and to continue *Railway Age's* service to its readers without sacrifice in the number of pages or the completeness with which important railway developments are reported, a number of expedients have been adopted. We have reduced margins and weight of paper and it has now become necessary to "freeze" the volume of our circulation.

We can, henceforth, accept new subscribers only on a "waiting list" basis—their subscriptions to be entered as those whose names are already on our mailing lists fail to renew upon expiration of their existing subscriptions. We cannot make subscriptions retroactive; and those whose subscriptions expire without prompt renewal will understand why we must ask them to take their turn on the waiting list if, later, they wish to reinstate their subscriptions. In keeping with the spirit of conservation—in order to make limited supplies produce their utmost in effective understanding of transportation developments—we shall, in accepting new subscriptions, give preference to persons professionally engaged in railroad work or some closely-affiliated activity. Those whose interests in transportation are less strictly professional will appreciate, in the light of our inability to meet all demands, the desirability in the public interest of our affording our services, primarily, to persons importantly and intimately associated with the industry.

Paper is today one of the scarcest of all commodities, and we believe our readers will bear with us in the unwelcome steps which we have had to take to save it. Meantime, all of us can mitigate the paper shortage in other ways—especially by not wasting it, and seeing to it that all old paper is promptly salvaged, and not burned or allowed to accumulate.

Katy Revivified for War Traffic

Roadway maintenance outlays leap from less than $4 million a year to $19 million in '43 in general program of upbuilding carrier's physical condition

Traffic on the Katy Has Nearly Trebled Since 1941

DURING the past three years, determined to play successfully its essential role in the war effort of the country and for the first time in more than a decade with the necessary earnings to make that possible, the Missouri-Kansas-Texas Lines have carried foward a property rehabilitation program which has not only brought them abreast of the exacting demands of war transportation in a vital section of the country, but which, if continued, will find their facilities, both fixed and rolling, in a highly favorable position to take up the load of the postwar period.

Hard hit by the declining traffic and low earnings of the depression period, while adhering doggedly to its determination to remain solvent, the Katy was in a weakened physical condition late in the 'Thirties, and continued little better off through 1940. However, during the latter part of 1941, with the growing traffic and earnings of that year, it lost no time in starting a program of plowing back into the property every available dollar in order to enable it to meet the increasing demands. In fact, in that year, foreseeing the important part that the road would be called upon to play in any defense or war effort of the country, the Katy instigated a comprehensive program of property rehabilitation to recapture ground lost unavoidably during the depression years—ground which had to be recaptured if it was to handle successfully any appreciably increased volume of traffic. That program, which gained impetus through 1942 and reached full stride in 1943, has brought about almost revolutionary changes in the condition of the road —in locomotives and rolling stock, as well as fixed facilities.

The program of roadway rehabilitation, with which this article will deal primarily, has affected practically every item of the fixed properties on the right of way, extending even to the removal of many antiquated, unsightly and unnecessary buildings of various types—to minimize fire hazards, improve appearance and reduce taxes.

The main effort, however, has been concentrated on strengthening the track structure by means of restoring eroded embankments, improving drainage, laying heavier rail with stronger track fastenings, the renewal of crossties, the replacement of worn out, pounded-down ballast, and extensive programs of rail end welding and track surfacing.

Serves the Southwest

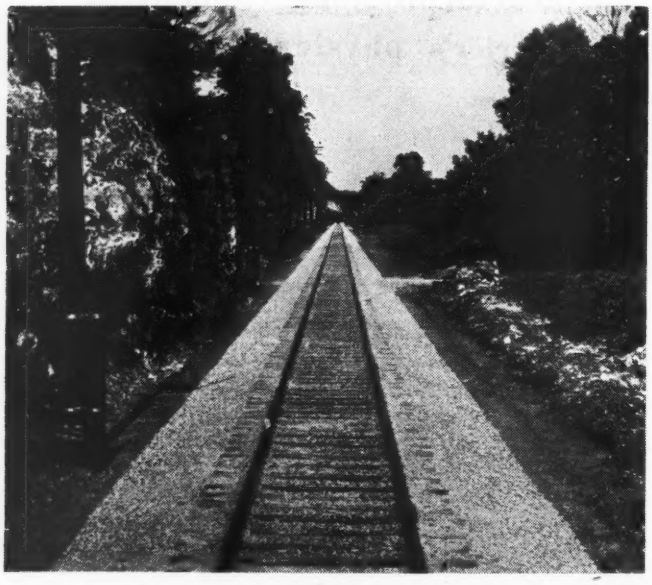
The Katy System, which had its beginning in the early 'Seventies in a short line in Kansas, now has 3,064 miles of lines serving a large part of the Southwest, with northern terminii at Kansas City and St. Louis, Mo., and southern terminii at Houston, Galveston and San Antonio, Tex. From Kansas City, the main line extends almost due south a distance of 136 miles to Parsons, Kan., where it is joined by the 387 miles of main line from St. Louis. From this point, which is also the junction of important branches to Junction City, Kans., Oklahoma City, Okla., and Joplin, Mo., the main line extends south to Muskogee and McAlester, Okla., and thence to Denison, Tex., a distance of 410 miles from Kansas City. At Denison, two single-track main lines continue south, one passing through Ft. Worth, Tex., and the other through Dallas, Tex., these uniting again at Hillsboro, Tex. and extending 33 miles to Waco, Tex., 185 miles south of Denison. From this latter point, the main line continues south to Granger, Tex., where it again divides, one line extending southwest to San Antonio and the other to Houston and Galveston, Tex.

Out of the Depths

Throughout, the Katy Lines are single track, except for approximately 43 miles of second main track immediately south of Kansas City, about 27 miles of second track out of St. Louis, about 54 miles of double track north of Denison, and about 10 miles of double track immediately south of Waco. During the depression years the railroad was operated as five districts, but with the increased traffic and operating problems growing out of war traffic, a sixth district was created in January, 1943. These six districts, as shown on the accompanying line

map, are designated as the Eastern district, the Northern district, the Southern district, the North Texas district, the South Texas district, and the Northwestern district.

Constructed originally with 52, 56, 60 and 65-lb. rail, practically all of the main lines of the road had been relaid with 85 and 90-lb. rail prior to 1930, and in other respects had been correspondingly strengthened. However, the early years of the depression found the road steadily on the down-grade. When the present management took over in 1933, the depression was in full swing and the finances of the road, if not its facilities, were fast becoming precarious. The remaining years of the depression presented a constantly uphill fight to remain solvent.



A Section of Track on the Katy That Is Typical of the Many Miles Brought Up to High Standards in the Road's Rehabilitation Program

Low earnings called for the practice of rigid economy, with the result that work programs were cut to a minimum and track and shop forces were reduced to a point sufficient only to keep the tracks and equipment in condition to handle the business offered currently.

Quick to Recognize New Responsibilities

In 1937, with some improvement in business and earnings, some additional roadway and structures maintenance was undertaken, but the "recession" which followed immediately called for further retrenchments, which continued with little change through 1940 and the early part of 1941. About the middle of 1941, however, the picture began to change. Katy traffic mounted steadily with the general revival of business and the location of many defense industries and military installations along its lines. In that year, the net ton-miles of revenue freight handled rose to 2,692,000,000, far above the average depression level. With the event of Pearl Harbor and the increased war activity that followed, revenue freight traffic rose to 4,628,000,000 net ton-miles in 1942, increasing further to approximately 6,730,000,000 net ton-miles in 1943 as the war effort reached all-out proportions. It would have been impossible for this greatly increased traffic to have been handled by the Katy as it existed at the end of 1941.

In spite of the traffic upturn in 1941, no one could foresee the needs of the future—the demands that would be made on the fixed properties of the railroads—but the picture was clear enough to lead the management of the Katy to initiate long-range plans for improvement of the property, commensurate with whatever the needs would require. In fact, by the fall of that year, maintenance of way employees were being recalled in large numbers and the first real evidence of a reviving property came into being.

The over-all picture of what was accomplished on the road during 1942 and 1943 in the rehabilitation of its roadway and structures is best seen in the increased expenditures for these accounts. Throughout the depression years of 1930 to 1939, inclusive, expenditures for maintenance of way and structures averaged $3,854,857 annually. In 1941, these expenditures rose to $4,806,000; in 1942 they climbed to $10,858,000, and in 1943 they soared to $19,027,000. In these same three years, the number of maintenance of way and structures employees on the road rose from a monthly average of 2,098, to 3,912, and then to 5,217.

Every Element of Property Strengthened

With the largely increased expenditures of money and labor in 1942 and 1943, the Katy greatly strengthened every element of its fixed property. It is true that in most cases this was a matter of building back to normal a physically weakened structure; however, in some cases, notably rail, the property was strengthened materially by the substitution of 90-lb. and 112-lb. rail for worn out 85 and 90-lb. rail. In these years, limited only by the tonnage it could secure under the allocation system set up by the War Production Board and the Office of Defense Transportation, the road laid a total of 143.3. track-miles of new rail in its main lines, in addition to 28 track-miles of second-hand 85- and 90-lb. rail in its branch lines; it built up the rail ends by welding in 860 miles of additional main tracks, and it renewed the angle bars on 358 miles of this reconditioned rail. In addition, it applied anti-creepers to 222 miles of track outside of its new rail programs, installed approximately 2,564,500 crossties in replacements, restored the embankment shoulders and improved the drainage along 989 miles of line, and resurfaced completely 670 miles of track, in addition to retieing and giving a preliminary raise on new ballast to 148 additional miles. Furthermore, in an effort to stabilize soft spots in the roadbed, it drove poles along the ends of the ties at various locations totaling 23 miles of track. Combined with this extensive work on its roadbed and tracks between terminals, it relaid approximately 23 track miles of rail in various yards with heavier rail and surfaced nearly 87 miles of yard tracks.

Structures also came in for their share of attention in the rehabilitation program, as is seen in the fact that during 1942 and 1943, bridge maintenance, repair and strengthening was continued, as necessary, and 290 steel structures were painted; 264 passenger stations, 105 section houses and 1207 miscellaneous buildings were repaired, as required, and repainted; 211 new section tool houses were built, and 1127 new crossing signs were installed. Supplementing this structural work, in the interest of getting rid of buildings that were obsolete, unsightly or no longer necessary, 58 passenger stations and 256 miscellaneous buildings were dismantled or otherwise removed, and 20 other passenger stations were cut down in size or replaced with small shelters.

This over-all program of rehabilitation and repair, particularly as it pertains to the track and bridge structures, was designed and carried out over the lines of the road in accordance with the greatest needs in the various

territories, but with the long-term aim of bringing the entire property up to standard conditions. To this end, it was necessarily broken up into a large number of individual projects, all of which were carried forward concurrently and as rapidly as possible, limited only by the labor and materials that were available.

Under this plan of spreading the work, practically all of the new rail received during the last two years was laid in the heavy-traffic north and south main lines between Kansas City and Denison, filling in gaps where rail was most needed although eight miles of new rail were laid in these years on the North Texas district and eleven miles on the South Texas district. The other items of roadway and track work were more uniformly distributed over the various districts, except for the Northwestern district, where the major work done was confined to routine tie renewals.

Adopts Heavier Rail Section

While not the largest item of track work carried out by the Katy during the last two years, one of the most important has been its rail renewal program in an attempt to catch up on deferred replacements and to provide a track structure equal to the task of carrying its greatly expanded traffic. That this phase of the road's rehabilitation work, involving a total of 143 miles of new rail in 1942 and 1943, was not larger, was not due to self-imposed limitations, but rather to the inability of the road to secure the rail desired.

One of the important phases of the road's new rail program is the adoption of the 112-lb. R.E. section for its main lines of heaviest traffic, with correspondingly heavier track fastenings throughout. All of its 112-lb. rail is control-cooled, and, until restrictions prevented, was end-hardened and chamfered at the mill. These same standards have applied to the 90-lb. rail laid by the road during the last two years on its main lines of less dense traffic.

With its 112-lb. rail, the Katy is employing 24-in., 4-hole, headfree, toeless joint bars, with 1-in. heat-treated bolts and coil spring washers. With this rail it is also employing 7¾-in. by 11-in., double-shoulder, canted and chamfered tie plates, with two transverse reinforcing ribs on the base; each plate weighing 12.6 lb.

An Old Practice Renewed

For its new 90-lb. rail, present standards call for 24-in., 4-hole, head-contact, slotted angle bars, employing 1-in. heat-treated bolts and coil spring washers. They also call for the use of 7½-in. by 10-in., single-shoulder, canted and chamfered tie plates, with two base ribs, weighing 10.50 lb. each. Tie plates are now applied to all ties during rail renewals, a practice that was begun in 1923, but which had to be discontinued in large measure during the depression, when not even all new treated ties could be equipped.

All rail on tangent track and on curves of less than 3 deg. is single spiked, with four spikes to the tie. Mainline curves of more than 3 deg., are double spiked on the inside. Anchoring of the rail against longitudinal movement is largely by anti-creepers of several different types, although some spring clips have been used in an experimental way during the last two years. Generally, from 6 to 10 anti-creepers have been applied per rail length, depending upon grades, traffic density and the general condition of the roadbed, although, on many sections of the road, as many as 12 anti-creepers are being employed. These anchoring devices are applied to prevent creepage in both directions, and while previous standards have called for their distribution throughout the length of the rail, several schemes of bunching the anchors are now being experimented with.

Other Track Standards

Along with the more secure anchoring of all of its new rail and many miles of its older rail, the Katy's extensive programs of rail-end welding and of renewing joint bars have proved invaluable in prolonging the service life of hundreds of miles of rail which could not have otherwise withstood the pounding of the traffic of the last two years. All of the rail-end welding has been done by the oxy-acetylene method, accompanied or not, as conditions required, by the replacement of worn, bent or cracked angle bars. Wherever the welding work was carried out, the joints were first surfaced carefully to eliminate sag or droop, and where the joint bars were renewed in conjunction with the welding, they were applied only after the welding was completed in order to avoid putting any

Sketch Map of the M-K-T Lines, Showing the various Operating Districts into Which It Is Divided

of the welding heat into them. After the new bars were applied, the joints were tamped up solid, and the welds then ground to a true running surface.

In its tie renewals, the Katy employed No. 3, 4 and 5 ties, all treated with a 80-20 creosote-coal tar mixture. The magnitude of its renewals during the past two years is seen in the fact that in some territories this has amounted to 900 or more per mile. For ballast, the road employs three types principally—crushed rock, chats and prepared gravel—rock and chats being used almost exclusively on its heavy-traffic main line north of Denison, Tex., and gravel elsewhere on its main and branch lines. Surfacing work on the road has been done largely with shovels, forks and picks, although an increasing amount of this work in recent years, especially in rock

and chats ballast behind rail laying operations, has been done with pneumatic tampers.

Supplementing the extensive tie renewals and ballasting and surfacing operations of the last two years, which were essential to regain ground lost during the depression and fit the road to carry its war-time traffic load, the large programs of embankment restoration and drainage work carried out on the Katy, together with its pole-driving operations along stretches of particularly soft track, have had a pronounced effect in strengthening the entire track structure over a large percentage of its main lines. The embankment work has been largely a matter of placing back on the roadbed shoulders material that has eroded over the years. In this work, which has been done both by teams with slips and fresnos, and by tractors and modern earth-handling equipment, the aim in single-track main line territory has been to restore the crown of embankments to a minimum width of 20 ft., giving a shoulder of at least 2 ft. 6 in. beyond the ballast toe line. In double-track territory, embankment shoulders of at least 2 ft. 6 in. have also been sought, increasing this width where necessary to insure proper maintenance and offset any tendency for erosion or settlement.

Drainage and Roadbed Stabilization

The roadbed drainage work of the last two years has been largely in cuts, which, in conjunction with the embankment restoration work, have been cleaned out or widened, reshaping and resloping the drainage ditches at the same time. Most of this work has been done with the five Jordan ditcher-spreaders on the road, the excavated material being carried out of the cuts and used to strengthen the shoulders of adjacent embankments. Supplementing this drainage work, however, the road has also installed a large number of French drains beneath and alongside the track to tap water pockets or to otherwise draw water out of the roadbed, and where this has proved impractical, it has resorted to the practice of driving poles along both sides of the track.

In this latter work, which during the last two years was done at widely scattered points over a total distance of approximately 23 miles of track, unpeeled, untreated poles ranging from 6 in. to 8 in. in diameter and from 10 ft. to 12 ft. in length, were driven into the roadbed immediately adjacent to the ends of the ties. These poles, spaced longitudinally the same distance as the space between the ties, form a subterranean open timber barricade along both sides of the track, and, in addition to such effect as they may have in breaking through water pockets, have a tendency to confine or restrain the roadbed material against lateral displacement under the weight of passing trains.

All of the work of this character on the Katy has been done under contract, with the aid of a track-mounted driver arrangement designed especially to speed the driving operations, cut costs, prevent disturbance of the track line and surface, and avoid interference with train operation. The most distinctive feature of this equipment is that it has duplicate leads and hoists, so that poles can be driven along both sides of the track simultaneously.

Other Work Undertaken

Supplementing all other work to restore the strength and stability of its track structure, the Katy has not overlooked the increased hazards of transverse fissures and other defects in its older rail under the pounding action of largely increased traffic, and to offset these greater hazards, it increased considerably in both 1942 and 1943, as compared with the depression years, the rail mileage tested by Sperry detector cars, and the frequency with which these tests were made. Neither has it neglected its bridges and buildings, as indicated unmistakably by the figures presented earlier concerning the number of bridges and buildings repaired and painted, and the number of various types of buildings replaced with new structures to meet present conditions, or abandoned and dismantled to rid the property of no longer needed facilities. In fact, as in the case of its track work, bridge and building maintenance, employing critical materials to a minimum extent, and utilizing second-hand materials wherever possible, has gone on at a pace not approached since before the depression.

High School Boys Have Played a Large Part in the Rehabilitation Program, Helping to Overcome Labor Shortage

Combined with these phases of maintenance work, the Katy has undertaken its share of new construction during the last two years to meet new traffic demands and change conditions, this, among other items, including the construction or lengthening of several passing tracks; the construction of 53 new yard and industry tracks; the installation of small fuel oil storage tanks at seven locations to avoid holding tank cars under load; the installation of nine miles of automatic block signals; the construction of two automatic interlocking plants, replacing manual plants; and the relocation of nine miles of main line between Pottsboro and Sadler, Tex., done by the government, and turned over to the Katy. This work was performed incident to the construction by the federal government of its dam and impounding reservoir in the Red river at Denison, Tex.

High School Boys Prove Helpful

And so the story goes—the largest annual programs of track, bridge and building maintenance in the history of the road, supplemented by considerable improvement and betterment work, while carrying the heaviest traffic in history, while interrupted by serious floods over wide areas in the springs of both 1942 and 1943, and while confronted with serious shortages in both materials and manpower. That the road was able to secure the necessary manpower to carry out these essential phases of rehabilitation was due alone to the persistence and ingenuity with which it sought labor from every available source, including the high schools along its line, from which it secured several hundred boys to work on the

track. The most extensive use of these boys was made in its large rail renewal program last year on its Kansas City division, between Paola and Parsons, which involved the relaying of nearly 90 miles of track with 112-lb. rail, replacing 90-lb. rail, and following this up with rebal-lasting and surfacing operations.

On this job, labor was the critical factor throughout. To offset losses to the military services and other industries, and quits for other reasons, more than 3,000 trackworkers had to be hired by the employment machinery of the road at Parsons alone to maintain a sufficient force to lay the new rail. Herein, the boys filled the breach, stuck by the job more faithfully than many of the older men, and from every report, rendered indispensable help. In fact, it is said that many of the boys outstripped the most experienced trackmen in driving spikes and carrying out other rail-laying operations.

Every precaution was taken to insure the welfare of the boys. They were provided transportation daily between their homes and points of work, were insured sanitary drinking water; and their conditions generally were kept under the watchful eye of a local physical instructor, and they were insured prompt medical attention where necessary. Likewise, the regular trackmen on this work were afforded the best of living conditions, being housed in a new group of Katy outfit cars, with features that have attracted widespread attention. These cars, with only eight bunks to each car, include a recreational room, shower baths with hot and cold running water, and electric lights.

Locomotives and Cars Keep Pace

While this article is intended to highlight the outstanding job that has been done in rehabilitating the fixed properties of the Katy in the interest of the war effort, the program of equipment rehabilitation has been equally outstanding—placing Katy locomotives and rolling stock in the best physical condition in history. Late in 1941, a total of 122 locomotives, or 39.2 per cent of the road's ownership, awaited repairs or rebuilding. During 1942, 232 locomotives were put through the shop, and at the end of that year only 27 locomotives, or 8.7 per cent of the ownership, were either in the shop or awaiting repairs. With such a record behind it, a well-balanced, efficiently planned program of shop operations was maintained throughout 1943, which saw 257 locomotives through the shops in that year, and only 22 locomotives, or 7.1 per cent of the road's ownership, in the shop or awaiting repairs at the close of the year. What these forward-looking, intensive locomotive maintenance programs of the last two years have meant to the Katy, and to the war effort, is seen unmistakably in the fact that the average daily movement of the Katy's serviceable freight locomotives during 1943 was 173.4 miles, which compares with the similar movement of freight locomotives on all Class I roads in the country in 1943 of 125 miles.

As with locomotives, a comprehensive plan of repair and reconstruction has been followed in the case of freight cars.

As of September 30, 1941, 1,710 Katy freight cars, or 25.4 per cent of its ownership, were out of service awaiting repairs. By the end of 1942, this number had been reduced to 50, and at the end of 1943 it could be said that practically every unit of freight car equipment owned by the road was in condition to meet current demand.

Thus, briefly, is the record of Katy rehabilitation during the last two years to meet the challenge presented by the war. And the work goes on in 1944, broadened and enlarged in many respects, and narrowed or restricted in others, as the need indicates—looking not alone to the country's essential war transportation needs, but beyond, to the equally important needs of the post-war period.

Self-Propelled Train

A "THREE-IN-ONE" passenger train, driven by a "packaged" electric power unit that can be quickly detached and replaced, has been designed by a Westinghouse engineer to provide faster, roomier and quieter service for post-war commuters.

Planned for maximum passenger space and easy maneuverability, the train will be made up of three articulated, or interlocking sections: a passenger car at each end and a compact, walled-off compartment in the center, containing a Diesel engine, electric generator and control equipment.

No overhead wires are necessary since the power "package" contains all that is necessary to furnish power for the electric motors which drive the train. Operator cabs at either end enable the train to be driven in and out of station terminals without involved switching delays. The train has been designed by A. H. Candee, transportation engineer, Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa. He offers the following reasons for its application:

"A train of this type will do much toward speeding up traffic in congested terminals. When a locomotive-hauled train enters a terminal station having dead-end tracks, it must be backed out and turned around, then backed into the station before it may be used for outbound passenger. This usually involves eight separate switching movements before the inbound train is ready for its outbound trip. But with a train containing its own driving power and with control compartments at either end, the number of movements is reduced to two in entering and leaving the station.

"The power unit of such a train can easily be removed for repairs. When the equipment shows signs of needing overhauling, the train is driven to the shop where the 'power package' is lifted out and another substituted. This will enable railroads to keep a maximum number of trains in service, while making repairs where they can be done most economically.

"Future passengers on the train will ride with a minimum of noise and vibration, since the Diesel engine and electrical equipment will be isolated from the passenger cars in a virtually sound-proof compartment. A walled passage-way around the engine will enable passengers to move easily and safely from one car to another.

"Power can be drawn from the unit as it is needed. This means that besides driving the train, the power unit can supply all the electricity that is necessary for air-conditioning, modern lighting, air cleaning, water coolers and other electrically-operated conveniences. In addition, the power supply is increased in direct proportion to the number of units that are coupled, since each unit contains its own 'power package.' As a result, the train can travel at the same speed no matter how many cars are in the train.

"Many suburban passenger cars now operating on American railroads could be adapted to this type of train. The use of a separate power cab means that these cars need not be scrapped, but can be converted to self-propelled trains at a minimum expense."

Employees as Railroad Spokesmen

Superintendents are told of one railroad's successful program for instructing employees in public relations

CONSIDERABLE thought and effort have been given by individual railroads and by the Association of American Railroads to improving relations with the public.

An opportunity lies before us that has been very meagerly explored to date. This opportunity comprises the awakening of a great army of railroad employees to the part that they can play in our public relations. A company is judged almost entirely by the acts of its employees. In the mind of the customer, the employee whom he contacts is the company.

Any program that has for its goal the good-will and confidence of the public must embrace the active participation of the employee himself. Your committee is firmly of the belief that this fact has never been brought home adequately to the rank and file of railroad employees. The question arises as to a practical way to bring employees to the full realization of their important place in the public relations movement.

Your committee has endeavored to find programs of this character that are now in effect on various roads represented by members of the committee. Our search indicates that there is a limited amount of actual work of this nature under way, although practically all of the railroads have the subject under consideration. This report is, therefore, of necessity confined largely to the limited amount of work that is now under way, supplemented by suggestions of various members of the committee.

To tackle such a problem successfully, the interest of the employees must first be aroused. We do not find that this interest can be aroused by printed matter alone. To succeed, such a program must involve a vigorous campaign of personal contact and interest on the part of supervisory officers. Anyone directing such a movement must himself be thoroughly "sold" on the merit of his assignment. With a public relations movement actively headed by the president of the railroad and earnestly supported by all intervening officers down to the superintendent, the latter's task is somewhat easier. A public relations program on a division cannot, however, he expected to be successful without the active and sincere participation of the superintendent and his staff.

The Conference Method

From such limited experience as we have been able to develop, we conclude that the most successful method of approach is the so-called "Conference Method." It is better for employees to discuss and settle for themselves some of these problems, than to have management attempt to "spoon feed" them with prepared ideas. Under this method, employees gather for a general discussion of the subject selected for the meeting. The leader directs the discussion, keeping it within reasonable bounds, without interfering with or influencing the ideas developed. The leader must, of course, use a certain amount of tact in handling the discussion. If the discussion does not develop freely under its own momentum, he must be prepared to propose questions, challenges, etc., to arouse enough interest to keep the meeting in intelligent and interesting channels. Such meetings, if successfully conducted, never fail to awaken interest—primarily because the employees are active participants in the meeting and feel that they have a proper place in developing conclusions reached by the group.

To Instill "Unfaltering" Interest

To conduct such a meeting successfully, a blackboard should be used and the group leader should be furnished with what is called a "board man" who will place on the board an outline of the ideas as the class develops them. This feature is sometimes handled by the group leader, but he should be relieved of this task so that he can direct his entire energies to conducting the discussion. Once an employee has been thoroughly imbued with the idea that he plays an important part in the analysis of any subject and that his personal concerns are vitally at stake, his interest will be unfaltering. The success of this method hinges to a great extent on developing a realization on the part of the employee that his future prosperity depends on the prosperity of his company.

To illustrate how such a method of public relations work can be carried out, we will describe briefly the program that is employed on one division of a road that is using this method. This road utilizes representatives of the State Board of Education for developing the details of the conference and for training class leaders. The course involves six meetings of two hours each, held once a week. A "certificate of accomplishment" is issued by the State Board of Education to those attending all six sessions, indicating that they have completed the elementary course in public relations. Any one who desires more advanced courses on the subject may continue in further classes held by the State Board of Education up to 36 hours.

The first step in the program is for the superintendent to present the plan to his staff and division heads of other departments. Request is made that all who are interested attend the classes. On the division in mind, this call brought out about 25 employees, comprising a fairly good cross-section of the various departments. While the majority of the members of this class held supervisory positions, probably a third comprised other interested employees, including the local chairmen of the conductors' and trainmen's organizations. Included in this group were the superintendent, three trainmasters, one assistant trainmaster, a motive power representative, a division freight traffic representative, a car department foreman, a division passenger agent and members of his staff, a freight agent, a general yardmaster, a ticket agent, a station master, a baggage agent, etc.

The first meeting aroused considerable enthusiasm. While the original intention was to have a supervisory

NOTE—This article is adapted from a report submitted at the national staff meeting of the American Association of Railroad Superintendents in May, by a committee of which K. A. Borntrager, superintendent, New York Central, Albany, N. Y., was chairman.

class primarily of about 20 members, others became interested and the class ended up with over 30 members on the rolls. This was a somewhat larger class than was desired; however, it did not seem wise to curb the growing enthusiasm. From this original class, leaders were developed who, under the guidance of representatives of the State Board of Education, formed and conducted other public relations courses at the division headquarters and at other points on the division.

At the outset, all were given to understand that the meetings were to be conducted in a democratic manner. All would be granted the privilege, and in fact encouraged, to offer suggestions, even though they might be critical in nature. The only request made was that criticisms be presented in a constructive manner and free from personalities. This seemed to clarify the atmosphere and lively discussion developed at all meetings.

The following subjects were discussed at the six meetings and a very brief outline is given of the ground covered in each.

Meeting No. 1—"Good Will"

At this meeting the general subject of Public Relations was introduced and the principles on which the classes were to be conducted were outlined by the class leader. Illustrating the principle, the leader stated that if two people met and each gave the other a dollar, each would depart with the same amount of money that he possessed originally. On the other hand, if two people met and each imparted an idea to the other, they would depart with each one having two ideas instead of one. The purpose of these classes is to bring about the exchange of ideas between members, to the end that they will all have the benefit of the experiences and knowledge of fellow members.

The leader wrote the names of all members on the blackboard (first names being used). Opposite each name, the years of railroad service were also listed. These years of experience were totaled, each one present checking the addition. This tended to "break the ice" and also brought out the rather startling fact that this class represented 538 years of railroad experience in various lines of endeavor. All agreed that probably each one could contribute something of value to the class and that all of them could learn something new. At this point the subject of "Good Will" was introduced. To demonstrate that "Good Will" actually had a tangible money value it was pointed out that the property of the Coca Cola Company was sold for $25,000,000 a few years ago, $5,000,000 of which represented physical property and $20,000,000 was said to represent "Good Will."

Following this discussion, the members were asked to list the various services that the railroad had to offer, each of which, if properly rendered, would be a potential source of increased "Good Will." This aroused a considerable amount of interest and developed a long list of services. The conclusion was reached at the end of the meeting that our product is service and that our customer, at the end of the transaction, has no tangible object to look at as having been purchased from the railroad. Customer impressions are, therefore, limited to the relatively short period of time in which the service is rendered. It follows, therefore, that each transaction must be conducted in a satisfactory manner, if "Good Will" is to be established and maintained.

Meeting No. 2—"Advantages of Working for the X. Y. Z. Railroad"

This subject aroused lively discussion as both the advantages and disadvantages of railroad employment were listed on the blackboard and discussed at some length. Full discussion developed that the advantages of railroad employment far outweighed the disadvantages. This held true in all of the classes. Another significant point was the debate on seniority. While all of the classes conceded some weakness in seniority, nevertheless all of the classes agreed that it should be listed in the "advantage" column.

Some of the more common "advantages" listed were steady employment, adequate wages, enjoyment of job, free transportation, opportunity to meet the public, opportunity to travel and see places, vacations, sick leave, seniority, pensions, etc. Common disadvantages listed included irregular hours in some classes of employment, inability to be at home in all cases, expense incident to being away from home, inadequate training system, etc.

The conclusion at the end of this meeting in general was that railroad jobs were, on the whole, quite desirable. This point was proved to a considerable degree by the low rate of turnover in railroad employment in normal times. Railroad employment being desirable, it follows that every railroad employee should be vitally interested in the success of the company that furnishes him such employment. Such, in general, was the consensus of all of the classes.

Meetings No. 3 and 4—Employee-Employer Relations

This subject is of such wide scope that it usually requires two sessions. The meeting generally develops the conclusion that, for a successful business, good relations should exist between the employees and the employer, between the employees and the public, between the employee and his fellow employee, between departments, between management and labor (unions), between the company and the customer, etc.

All of the foregoing relationships are discussed at some length, but the talk of the discussion usually deals with the employee-employer relationship. All classes seem to agree that it is imperative that the relationship be satisfactory before the product that we present to the public can be of a satisfactory nature. To develop this feature, three columns of "wants" are listed, one at a time. In the first column are shown what the employee wants, the second column shows what the employer wants, and the third column what the customer wants. For the purpose of this discussion, the "employer" includes management (supervision) down to a moderately low level.

After the three lists are developed, an interesting comparison is made between the "wants" of employer and employee. A rather startling development is the fact that so many of the "wants" are found to be identical and none is really opposed to the welfare of the other group. Turning next to the wants of the customer, it is found that all the wants agreed upon of both employer and employee are not incompatible with the customer's wants.

Some of the common desires of employer and employee are: respect, honesty, courtesy, loyalty, fairness, increased business, recognition, adequate pay, efficiency, etc. It can readily be seen that the proper development of these features between employer and employee is not incompatible with the customer's wants. In fact, if the employer and the employee can both successfully achieve these wants, the public's attitude to, and his use of, railroad services will no doubt be improved.

Following this comparison, another is made, having for its base the wants of the stockholders and board of directors. In the discussion of this feature, the ownership of the company is brought out, showing that, aside from direct ownership of stock by individuals, there is a broad base of railroad ownership representing the holdings of banks, insurance companies, etc. Considering this fact, probably all of us have a direct or indirect ownership in the company. Therefore, we have another stake in the industry in general, aside from the tangible one of job ownership.

Again, the comparison brings out the fact that reasonable wants of the stockholders are not incompatible with the best interests of the employee. The discussions of this subject clear up in the employee's mind many of the misunderstandings prevalent between capital, labor and management. Illustrating that capital, management and labor have the same problems basically, the fact is brought out that all suffer in times of business depressions and all gain during expanding business.

Meeting No. 5—Remedies for Employee-Employer Misunderstandings

This meeting develops the indications of possible poor employee-employer relationships that are offensive to the public. Such indications include discourtesy, indifference, lack of knowledge of the job, slovenliness, late trains, dirty equipment, damaged shipments, etc. Discussion of the causes of these undesirable factors develops such factors as poor training, improper placement, ill

health, worry, poor working conditions, inadequate education, lack of opportunity for advancement, etc.

Possible ways for improving the situation include improvement of possibilities for advancement and increased pay, better selection of employees and better placement. Proper training is advocated, which should include a brief general orientation, followed by direct training on the job to be performed. It is generally agreed that selection and placement are rather difficult to handle under existing conditions. Probably the outstanding remedy suggested for the solution of the problem is intelligent supervision. A brief review of the requirements of intelligent supervision reveals such features as fairness, understanding, knowledge of the job, patience, courtesy, etc.

Classes seem to recognize that weaknesses in the personnel structure present a barrier to improved service and the desired goal of better public relations and increased business. An example of a local bus company was brought out by a train service employee in one of the classes to show how an organization could benefit in this manner. All agreed that this company had enjoyed a phenomenal increase in business and it was the consensus that this improvement was due primarily to the splendid service, courtesy, etc., of its employees and particularly by the bus operators. Incidentally, the point was made that this company recently reduced fares to pass on to its customers some of its prosperity. All such actions tend to increase the popularity of the company, with an attendant increase in volume of business and employment.

Meeting No. 6—Employees Off the Job

At this meeting, the subject of what employees can do off the job in their normal activities in their community is discussed. It has been agreed that there is a considerable opportunity in this direction in building up public relations in various groups and organizations to which a railroad man may belong. Among these activities are church, politics, Y. M. C. A., labor organizations, fraternal organizations, golf clubs, boy and girl scouts, red cross, service clubs, P. T. A., community chest, etc.

In all of these groups or activities, the railroad employee is usually looked upon as the spokesman or "information bureau" for his company and, if he can handle inquiries directed toward him in an efficient, courteous and generally satisfactory manner, it reflects to the credit of both himself and the company. It follows that a railroad man, whether or not he is in direct contact with the public on the job, still can play a very important role off the job, if in no other manner than in the way he conducts his normal life. In other words, the public's reaction to the company can be enhanced or impaired by the citizenship displayed by the railroad employee.

From the study that we have been able to give the subject, we feel that some of the cardinal features for successful public relations work can be summarized as follows:

1. Sincere interest of management and supervision. To arouse sustained interest down through the ranks, it is highly desirable that all the encouragement possible be obtained from all levels and from all departments of management.

2. The superintendent and his immediate staff must realize that it is their primary responsibility to place the plan in active and practical operation. This work logically subdivides itself as follows:

(a) "Selling" the plan to key people in all departments.

(b) Bringing together in the initial stages, the key people who must be interested in the plan to make it a success.

(c) Extending the program down through the rank and file of railroad employees. This, of course, means that leaders have been trained out of key groups to perpetuate the movement.

Throughout all these stages, the superintendent's interest should be unfaltering. We believe that the greatest possible encouragement to groups taking this course is to have the superintendent take an interest in any reasonable ideas they may develop and, if possible, place some of the ideas in effect. If outstanding ideas or achievements of class members and others can be brought to notice with a warm word of commendation by the superintendent, the movement is greatly stimulated.

It will probably take one or two evenings a week of a superintendent's time for a couple of months to handle such a public relations program actively. Following this, we believe, from the experience so far gained, that the work on his part will consist largely of contacts coming to him from interested employees. These contacts, if properly handled, can be the means of solving many of the troublesome problems which confront every superintendent. In the long run, it is quite possible that the net expenditure of the superintendent's time will be lessened rather than increased by such public relations work.

Halting Casualties

THE prevention of accidents to conserve the manpower of the railroads was the keynote of the railroad program of the Central States Safety Congress at Kansas City, Mo., on June 7 and 8. The meeting, which was attended by 450 representatives of the railroads, was presided over by J. M. Prickett, vice-president in charge of labor and public relations of the Kansas City Southern, and chairman of the Railroad section of the Congress, while P. F. Buckle, superintendent of safety of the Chicago, Burlington & Quincy, acted as symposium leader.

The session on the first day was devoted to addresses on pertinent subjects while that on the second consisted of the showing of safety films and a symposium designed to reveal the reaction of workers to moving pictures as a medium of visual education. The speakers at the first session were C. L. LaFountaine, general safety supervisor of the Great Northern at St. Paul, who reviewed accident trends; C. W. Riley, district safety engineer of the Chicago, Milwaukee, St. Paul & Pacific at Ottumwa, Iowa, who discussed train accidents; F. A. Bogue, superintendent of safety of the Chicago, Rock Island & Pacific at Chicago, who described how injuries are caused; E. L. Duggan, superintendent of safety of the Atchison, Topeka & Santa Fe at Chicago, who described that railroad's plan for reducing personal injuries; R. D. Copeland, safety inspector of the Wabash, who spoke on maintenance of way injuries; and B. W. Smith, superintendent of safety of the Missouri Pacific, who emphasized rule compliance in accident prevention.

The motion pictures shown were those of the Santa Fe, the Denver & Rio Grande Western, the Great Northern and the Missouri Pacific. Those present favored motion pictures as a means of visual education but were of the opinion that they should be used in conjunction with other forms of education. The majority favored colored motion pictures. It was also the consensus that while a picture covering accident prevention in all departments is of interest to all employees, greater educational value can be secured by limiting the film to a particular class of work so that more instructive detail can be shown. Opinion was divided as to whether the wrong way of performing duties should be portrayed. Some felt that showing wrong ways would confuse the employee, while others contended that such demonstration gave a desirable emphasis.

The increase in accidents among employees and passengers cannot be justified by the war, according to Mr. LaFountaine. In 1943, 205 passengers were killed, compared with 38 in 1942; and 2,365 were injured, as compared with 1,195 in 1942. Train accidents are dis-

tressing to the railroads and the public and are bad advertising. Train accidents per locomotive-mile increased 13 per cent over 1942 and 24 per cent over 1941, while manpower increased only 11 per cent. Of the train accidents, collisions increased 17 per cent and derailments 21 per cent in 1943 compared with 1942.

Mr. Riley advocated the use of surprise tests to keep train and engine employees alert. These tests should be made at outlying points. He also discussed signal tests, suggesting that they be honest ones and be conducted to keep men awake and alert to prevent train accidents. A large number of employees, many who have been in train service several years, were said not to know how to light fusees; Mr. Riley urged supervisors to examine train service employees to determine whether they know how to store and operate various signal devices safely.

How Injuries Are Caused

Mr. Copeland emphasized the need for the constant teaching of safety by calling attention to the fact that older men, with three or more years' experience, rather than the younger ones, are having accidents. Accidents among young persons are due to improper training while those among the older employees are due to carelessness. Supervisors "should speak the employees' language" and all officers should set an example and be living exponents of safe conduct.

Mr. Bogue discussed the causes of injuries in part as follows:

"Individual railroads have found it necessary to modify for the 'duration' their age limits for employees, both downward and upward, as well as to relax some of the physical requirements. Necessarily, there has been an enormous labor turnover on all lines and this condition has had an effect upon the casualty records. With this labor turnover and the large number of comparatively inexperienced men in service, the fact that the casualties have not been greater is a tribute to the 'experienced' employees and the interest they have displayed in training the 'new' employees as well as a tribute to the supervising officers and foremen.

"We know that the most effective way for the worker to keep himself from being injured is to keep his mind on the task at which he is working and also upon his surroundings. But for the last three years, thousands of railroad employees have boys in military service, many in the combat zones or upon the seas. The parent, or near relative, would not be human if his mind many times a day (or night) did not wander to that boy, wondering where he was, what he might be doing, if he were safe. It is well to remind employees, something of whose family life we know, of the vital importance to them, regardless of thoughts and anxieties that will creep in, of keeping their mind at all times upon what they are doing, and upon their surroundings.

"I am impressed with the thought of how needless the great majority of our employee personnel injuries are. In nine out of ten cases simply ordinary care and alertness would have prevented the accident. Very few employee injuries are caused by a physical condition of the property or equipment. Some result from failure to follow safety rules, or good judgment. Some injuries result from chance-taking or the desire to 'cut a corner,' but by and large ordinary care and alertness by the employee would prevent the casualty.

"Approximately one-third of our reportable injuries on the Rock Island in 1943 occurred to employees of less than one year's service, while some 42 per cent occurred to employees of ten to thirty years of service."

Mr. Duggan portrayed the philosophy of the reorganized safety department of the Santa Fe. He said in part:

"In the reorganization of the Santa Fe safety program, we have not used new methods, but have simply revitalized, or attempted to revitalize, the old ones. New posters, new safety literature and visual education, are all necessary in any safety movement. We made a film on our own property portraying men at work, and as we progress, we intend to enlarge this portion of the program and eventually have films dealing with all phases of our operation.

"First and foremost, full support must be had from the top down, and the active interest of every supervisory officer must be secured. With such an interest you can perform miracles; without it, any safety movement will fail.

"Give attention to employees' suggestions concerning unsafe conditions. To do otherwise is to invite disaster, for employees are quick to sense lack of interest on the part of supervision in this regard and will quickly lose interest in safety, and the safety meetings, if they are not given the consideration they have every right to expect.

"At times we no doubt fail to make the employee realize his importance in his particular job, and how necessary he is to his railroad. A worker may perhaps do nothing more than sweep the roundhouse, but he is an important cog, for if he fails in his task or is not there by reason of injury, the roundhouse becomes littered with debris and some more skilled worker may stumble and fall, and be lost from his task at this most critical time.

"Be as quick to express appreciation for a task well done as you are to criticize when it is not done properly. To arouse employee interest in safety you must first secure his loyalty, and instill in him the belief that the safety movement is beneficial to his welfare, because, no matter how humble his task may be, he plays an important role. We must not close our eyes nor wink at rule infractions. When the employee fails, it is usually the supervisor's resposibility. The employee is as loyal and as efficient and safe a workman as his supervisor demands that he be."

Rule Compliance Depends Upon Leadership

Mr. Smith, in discussing rules, contended that rule compliance depends upon leadership that recognizes that men are more important than machines and tools. He said in part:

"Analysis of personal injuries definitely shows that the vast majority are due to causes over which the injured persons have control. The latest reports of the I. C. C. on train accidents charges negligence of employees as the cause of 95 per cent of all collisions and 24 per cent of all derailments. A check of the principal causes for waste of materials and fuel, damage to freight, improper use of cars, delays and other inefficiencies shows us that they involve the human element—the failure of men to comply with rules and instructions.

"We have made available the printed rules, standards and instructions which cover practically every known situation which may arise. In addition we have adopted and put into effect many and varied methods of oral and visual instructions and explanations on rules.

"While we cannot minimize the value of class-room instruction and other such methods of inspiring interest and teaching rules and the importance of rule compliance, we must recognize that the supervisor is the man to bring about compliance with the rules. Regardless of such instructions and examinations, the education and training must be continued on the job and the supervisor is the teacher.

"The supervisor who is blind even to a minor infraction not only fails in his opportunity to educate and maintain interest but he actually places his stamp of approval on the violation.

"The surprise test is generally associated with train operation but there are ways and means of making surprise tests in almost all other activities in all classes of service. The alert supervisor can originate such tests by a little thought and planning and he should not confine himself to certain tests that are in many instances, required by general instructions.

"The supervisor must set the example. Not only must he insist on rule compliance, but he must also comply with the rules. The supervisor who talks rule compliance in rule classes, safety meetings and other such meetings and then goes out on the railroad and ignores rule violations and in some cases encourages failures to comply with the details of the rules is not sincere in what he has said and loses the respect of the men."

Pvt. M. J. Masone (Queens, N. Y.) Adjusts a Coupling. UPPER RIGHT—Train, Hauled by American-Built Locomotive, Passes Through a Cut Somewhere Along the Line. At the Controls, Pvt. D. Hellingsworth, Pittsburgh, Pa.

Army Railroaders Operate the Bengal & Assam Ry.

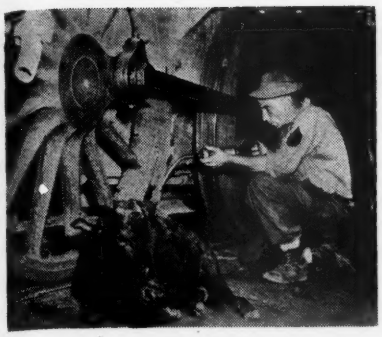
WHEN American railroad troops took over portions of the Bengal & Assam Railway, (virtually the only supply route for the men engaged in building the Ledo Road and for General Stilwell's troops in northern Burma, description of which appeared in the *Railway Age* of April 15), they encountered two major stumbling blocks — the first, now nearly corrected, that of transshipping freight from broad-gage to meter-gage line; the second, involving ferrying of cars on small barges across the Brahmaputra River, the varying level of which from dry to monsoon season prevents bridge construction. With the advent of the M. R. S., tempo at the ferry point soon picked up. There was quick switching of engines from yards to barges, American brakemen rapidly uncoupled and coupled cars, and, though Indians were still employed, whenever there was chance of delay, American railroaders were quick to step in. In the first two months under the new operation, there was roughly a 40 per cent increase in the volume of traffic handled.

For military reasons it cannot be made known how close the recent Jap drive in northern Burma came to the B. & A.'s lines, but, as one officer puts it, "it is no exaggeration to say that the railway was being operated by our men very close to the Jap lines."

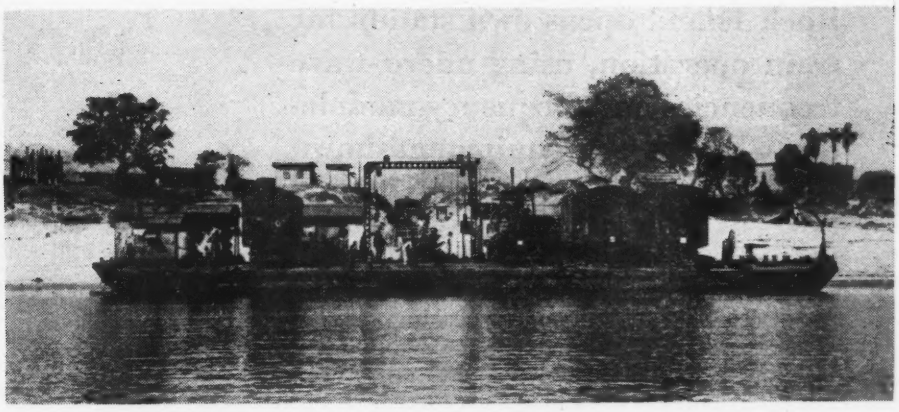
Officers Former Railroad Men

When the M. R. S. was set up in the China-Burma India theater of operation, under Brig. Gen. Thomas B. Wilson, his organization included a number of ex-railroaders. They were: Col. John A. Appleton (P. R. R.), who was there at the start; Lt. Col. Martin Goerl (N. Y. C.); Lt. Col. Stanley H. Bray (S. P.); Lt. Cols. H. B. Hoyt and Karl F. Emmanuel (N. Y. C.); Lt. Col. George R. Branch (Rock Island); Lt. Col. Harvey B. Pilcher (Wabash); Lt. Col. W. P. Wilson (C. B. & Q.); Lt. Col. Alva C. Ogg (T. & P.); Lt. Col. Clarence V. Conlisk (Santa Fe) and Maj. Hubert M. Phillips (P. R. R.). Lt. Col. Richardson, formerly with *Railway Age*, is Director of Supply for the Transportation Service.

AT LEFT—On Pole, T/5 R. J. Vadbunker (Ashkun, Ill.) and T/4 J. Greer (Roanoke, Va.) Putting in a Communications System at the Terminal Along the Ledo Road in Assam. CENTER—at the Changeover from Broad Gage to Meter Gage Track in India—Lowering the Crate Into the Car Are: (left to right) T/5 Albert D. Giebelhaus and T/4 D. J. Bauer (on crate), Both of Lincoln, Neb., and Sgt. E. J. Eggers, Dubuque, Ia. (formerly C. B. & Q.)

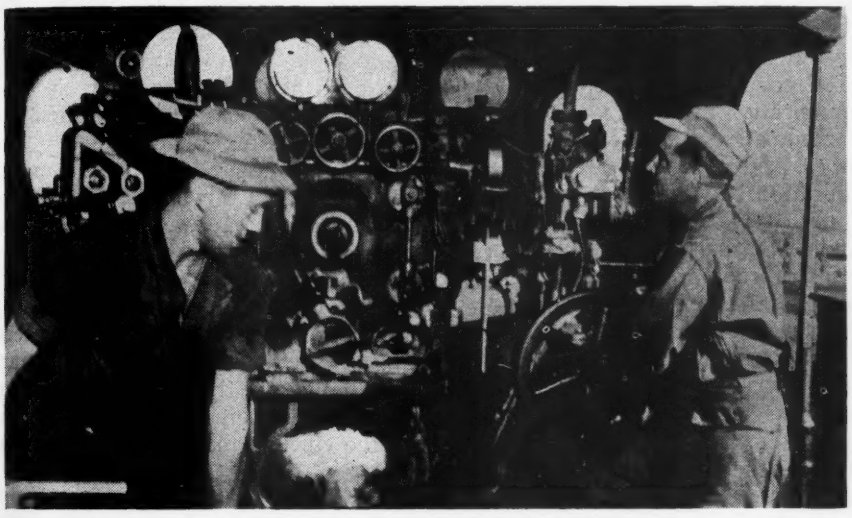


Former N. Y. C. Railroader, T/4 C. E. Roth, Canandaigua, N. Y. Greasing a Locomotive



ABOVE—Known as a "Ghat," This Ferry Point, Where Cars Are Loaded Onto Barges Along the Brahmaputra River, Is One of the Bottlenecks of the Line

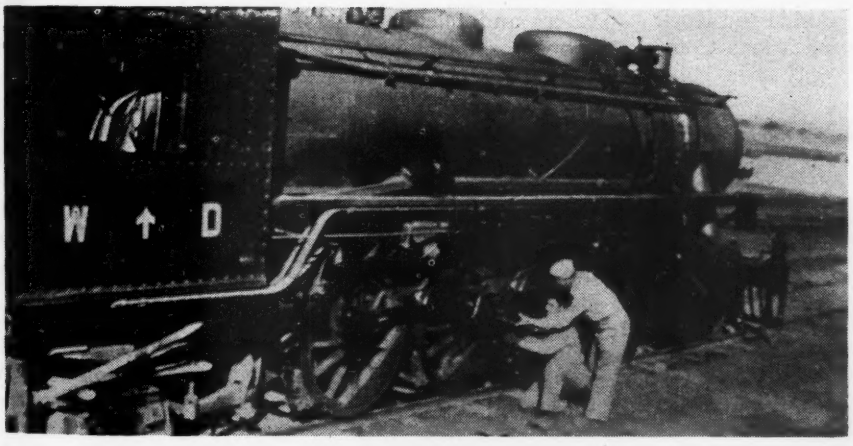
U. S. War Department Photographs



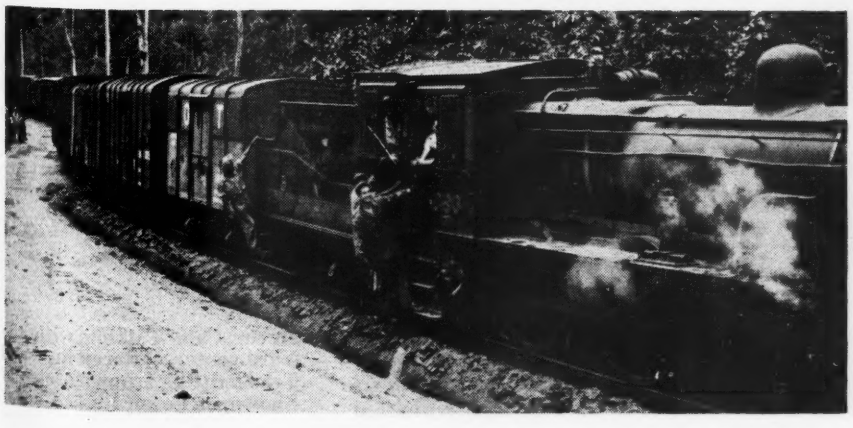
ABOVE LEFT—In the Cab Are Pvt. N. B. O'Brien (of Croton-on-Hudson, N. Y., and Formerly with the N. Y. C.), Stoking the Fire, and Pvt. D. J. DeJerolme, of Niles, Ohio, and Formerly with the Erie

ABOVE—Ex-Erie Railroader, Sgt. F. L. Nealon, Corning, N. Y., Consults with an Indian Army Lieutenant in Charge of a Track Crew

LEFT—Corp. J. Bassallo (Croton-on-Hudson, N. Y.) and Capt. H. E. Owens (Mattoon, Ill.) Check a Rod on a "MacArthur" Engine. Both Are Former N. Y. C. Men



ABOVE—Pvt. E. Parmer (Douquoin, Ill., and Formerly with the I. C.) Directs an Indian Engineer
LEFT—At a Jungle Siding at the Railhead of the B. & A.



Micro-wave

Rock Island opens own station for train operation, using micro-wave frequencies and frequency modulation—Emergency equipment shown

"ELLIS, where are you?" called John D. Farrington, chief executive officer of the Chicago, Rock Island & Pacific, speaking into a telephone and pressing a button on a radio set in a yard office. Immediately and clearly came the reply over the loudspeaker from C. O. Ellis, superintendent of telephone and telegraph, who was in the cab of Diesel switcher locomotive No. 701, "About 700 ft. north of the viaduct in the middle of the yard."

Thus, on June 5, at a demonstration for the press, the Rock Island became the first railroad to purchase and install its own station for radio communication using micro-wave frequencies and frequency modulation (as briefly reported in the *Railway Age*, June 10, page 1132). This inaugural demonstration of communication between the yardmaster's office and switcher engines over station W-10-XTH, Burr Oak yard (Blue Island, Ill.), marked the first stage in a Rock Island program of radio research and development that was begun several months ago to (1) establish communication between front and rear ends of trains; (2) establish communication between a fixed point and trains; (3) provide emergency service; and (4) provide safety devices.

Concerning the inauguration of this radio station, Mr. Farrington said "This radio installation is the beginning, and as equiment for other uses becomes available, we plan to employ radio extensively as a vital part of our communications system over the entire railroad."

The requisite federal permission was granted the Rock Island on May 30 by the Federal Communications Commission—which authorized the use of two-way radio communication between yard offices and train engines or cabooses; yard-to-yard; dispatcher to trains, engines or cabooses; brakeman or flagman to trains, engines or cabooses, and end-to-end of trains. Radio telephone and radio telegraph emission is authorized, including the use of both amplitude modulation and frequency modulation. Frequencies authorized are within the bands 30 to 40 megacycles and 100 to 400 megacycles.

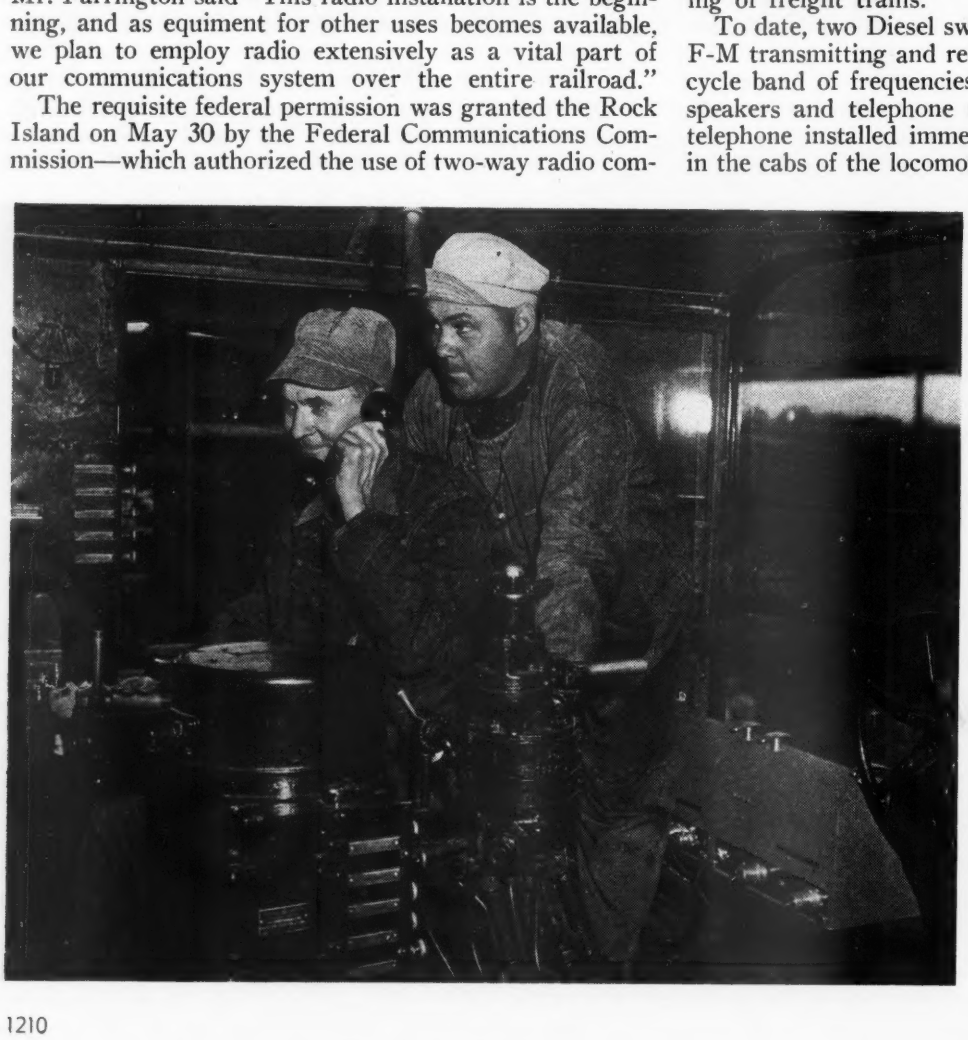
Installed by Railroad

The radio equipment so far used in these experiments has all been frequency modulation (for elimination of static and interference) in the 30 to 40 megacycle band of frequencies. This equipment has been designed and installed by the railroad company, apparatus being furnished by the Galvin Manufacturing Corp., makers of Motorola radio. Because of difficulty in securing parts, no equipment for operation in the 100- to 400-megacycle band has been placed in service as yet.

The installation inaugurated at the Burr Oak freight yard on June 5 consists of transmitting and receiving units used for communication between two yardmasters' offices and switching engines. Over 3,000 cars are handled in these yards daily, and the use of direct communications between the yard office and engineers is expected to facilitate the efficient make-up and dispatching of freight trains.

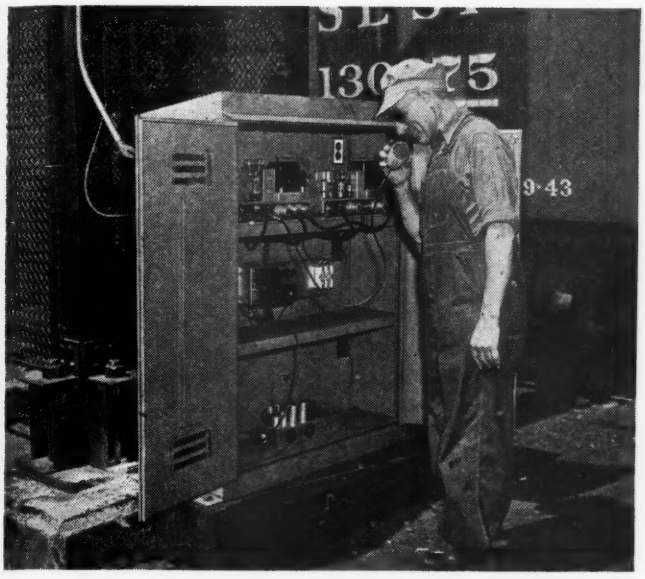
To date, two Diesel switchers have been equipped with F-M transmitting and receiving units in the 30-40 megacycle band of frequencies. These units have both loudspeakers and telephone sets, with the loudspeaker and telephone installed immediately in front of the engineer in the cabs of the locomotives. The transmitting and receiving units are mounted on the floor below the window behind the engineer's seat. The master control station, through which messages are relayed to and from the yardmaster and engineers, is located in the middle of the yard at the base of a 90-ft. light tower, upon which the antenna is mounted. A loudspeaker and telephone are located in both the outgoing and incoming yardmasters' offices. These are connected to the master control station by conventional telephone circuits. This communication system has a range of 30 miles.

The transmitting stations, located in the two yardmasters' offices, enable the yardmasters to speak to any



In the Cab—Talking with the Yardmaster. Receiving and Transmitting Apparatus Is Shown in Lower Right Corner

Radio in Yard Service



Monitor at the Master Control Case Checking Transmission in Both Directions

engineer on his locomotive, within a radius of 30 miles, and direct him in the switching of cars, making up, or dispatching trains. When the yardmaster takes the earphone off the hook and presses the button, he may begin transmitting, and his voice will be carried by wire to the control station located in the middle of the yard. The message will then go out over the air by radio to the locomotive cab, where it will be received through a loudspeaker. Each of these transmitting instruments is equipped with an automatic volume control which keeps volume and voice at proper level. The yardmaster may receive the engineer's message either through the earphone or on the loudspeaker which is part of the transmitting-receiving set.

In the master control case on three shelves are transmitting and receiving relay units; a remote control unit, consisting of a relay for simplex operation and an equalizer to control the volume of tone through the telephone line leading to the yardmaster's office; and a monitor amplifier for checking the complete installation of the entire system. Through a loudspeaker in the master control case, a monitor can hear both the engineer and the operator in the yard office. The receiver is crystal-controlled single channel, tuned only to the frequency of the locomotives (39,540 megacycles).

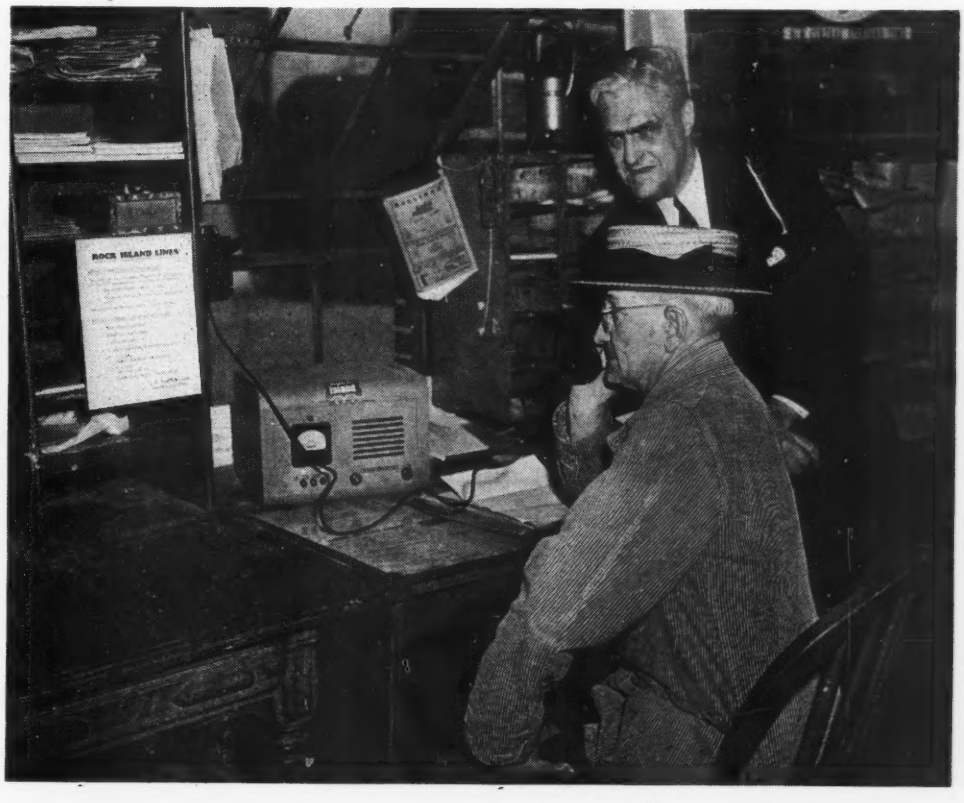
When the yardmaster pushes the button which turns the transmitter on, a lamp is lighted in the locomotive cab, indicating that the station is on the air. While the dispatcher talks, a green light shows, and when his button is released, a red light indicates that the engineer may begin to transmit his message back.

Under normal conditions, the power for these units is provided by means of a motor-generator located under the hood of the Diesel locomotive, and is driven off the starting battery of the Diesel. Therefore, primary power for the generator is always available. Due to war restrictions and slow delivery, these units were not available, and gasoline-generator sets were used temporarily. These transmitting-receiving units use 300 watts when transmitting and 125 watts in stand-by or receiving service. The output into the air is 10 watts.

Emergency Sets Developed

In addition to the demonstration of the yard office to switcher communication, two emergency sets were also shown. These sets operate on micro-wave frequencies, and were used recently in Kansas to bridge a 30-mile line gap in the company's communications which could not be repaired quickly. One set has a transmitter on 30.660 megacycles and a receiver on 39.540 megacycles, while the other is reversed, with a transmitter on 39.540 megacycles and a receiver on 30.660 megacycles.

The receiver and transmitter for each set are mounted



Clyde Emmert, Yardmaster, Talking to a Switching Crew, While J. D. Farrington, Chief Executive Officer, Looks on

C. O. Ellis, Superintendent, Telephone and Telegraph, Checks Operation of Emergency Unit No. 1

compactly together in a small portable waterproof box (about 2 ft. by 2 ft.). Each set has two antennas, one for transmitting and the other for receiving. These antennas have special pronged bases so they can be stuck in the ground at any place, providing both antenna and ground connections. The antennas are tuned (a special length for each frequency—the higher the frequency, the shorter the antenna) and with tuned antennas and crystals, the sets require practically no adjustment, except for volume.

To Build Emergency Sets

Because each set has a receiver and transmitter on separate frequencies, they can be set up at each end of a line break, turned on to operate in duplex and the cases can then be locked and left unattended to provide continuous communication until the line can be repaired. The sets are powered by a generator which can be plugged in to any convenient 110-volt source of current or by portable gasoline motor-generators.

These sets were used successfully in Kansas during the latter part of April when an unusual storm crippled telephone lines and dispatching circuits. Investigations disclosed that most of the damage could be repaired quickly except for a break between Colby, Kan., and Selden, which would require about two weeks to restore. The sets were rushed to those points and functioned satisfactorily during this interval. The Rock Island plans to construct additional pairs of sets and hold them at Kansas City, Mo., and Chicago ready to be taken to any point in the event of an emergency.

Further Developments Planned

In continuing the research on the use of radio microwave communication in railroad work, the Rock Island plans to develop a radio system which will be installed for use between the rear and front ends of freight trains and which will be basically the same as the system operating now between the yardmasters and locomotives in the freight yard at Blue Island, except that an operating frequency of between 100 and 400 megacycles will be used.

For long distance communication between dispatcher and engine or caboose, it is planned to use an installation that works on the induction principle, which will radiate at a frequency of 80,000 cycles. The power in the caboose will be generated by a wheel-driven generator which will charge batteries as the primary power source.

This radio work on the Rock Island was done by E. A. Dahl, electronic engineer, under the general supervision of C. O. Ellis, superintendent of telephone and telegraph.

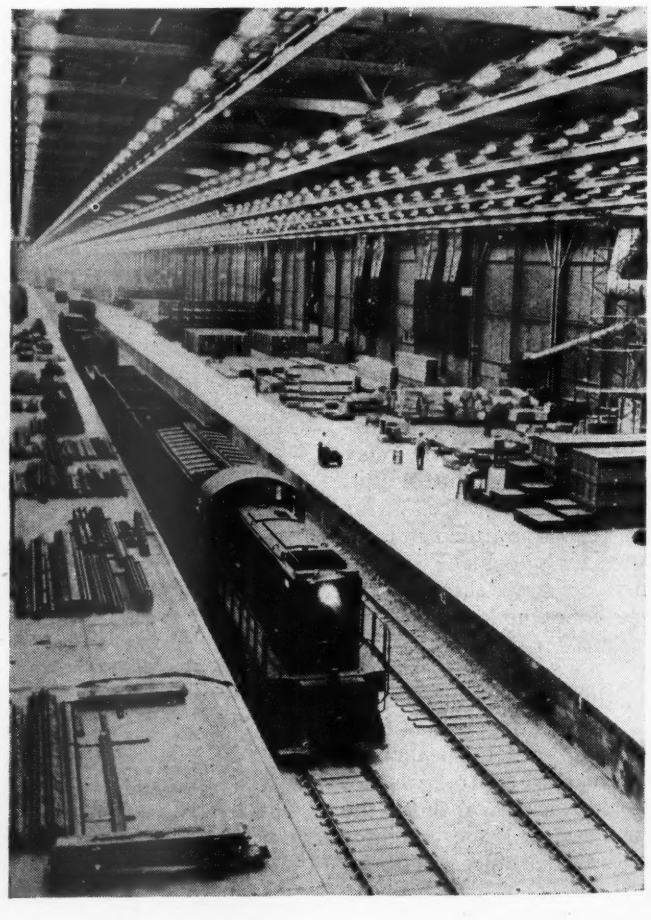
Tests on a Road Freight Train

On Sunday, June 18, the Chicago, Rock Island & Pacific conducted tests of two-way radio telephone communication between the locomotive and caboose of a freight train as well as between the train and offices in the La Salle Street Station in Chicago, as the train left Chicago en route for Kansas City, Mo.

The conductor, V. D. Crist, and the engineman, Walter Edmund, checked their watches, compared train orders, and then the conductor gave the engineman a "vocal high-ball' as the train pulled out of the freight yard at Blue Island, Ill., 15 miles from La Salle Street Station.

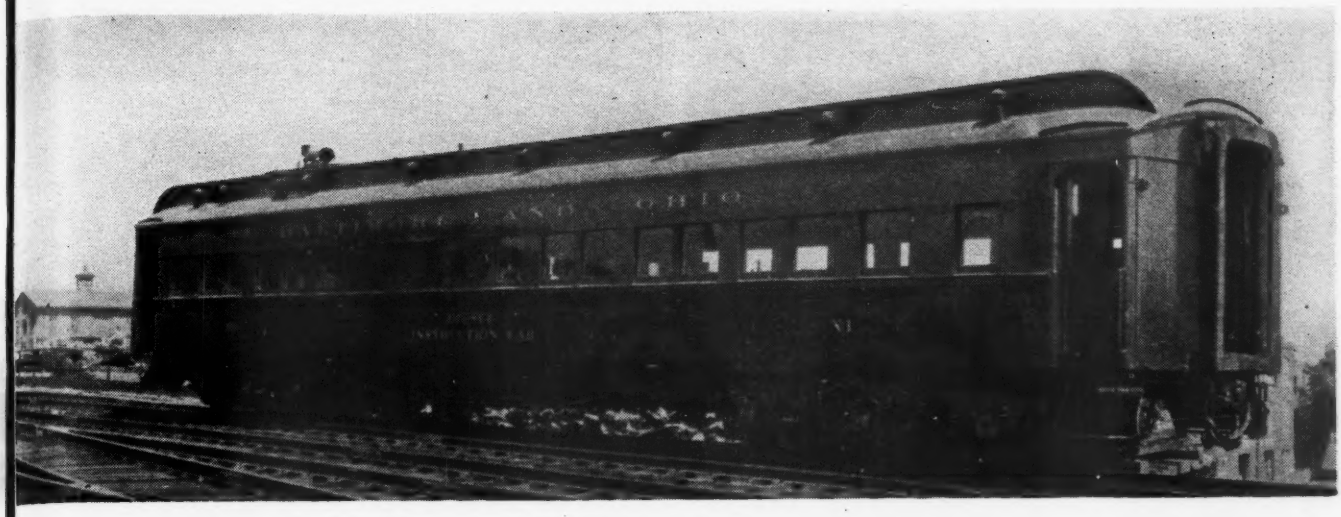
C. O. Ellis, superintendent of telegraph, and E. A. Dahl, electronics engineer, were on the train, while W. H. Hillis, operating officer, George W. Raney, general manager, and A. E. Ganzert, electrical engineer, were at the office in Chicago.

* * *



Railroad Bay of the Bell Bomber Plant at Marietta, Ga.

The area is lighted entirely by two-lamp Sylvania fluorescent fixtures each 5 ft. long, mounted end to end. Lighting units are cleaned and relamped from suspended catwalks paralleling the rows of units—There are 39 miles of such catwalks in the entire plant.



Car for Diesel-Electric Instruction

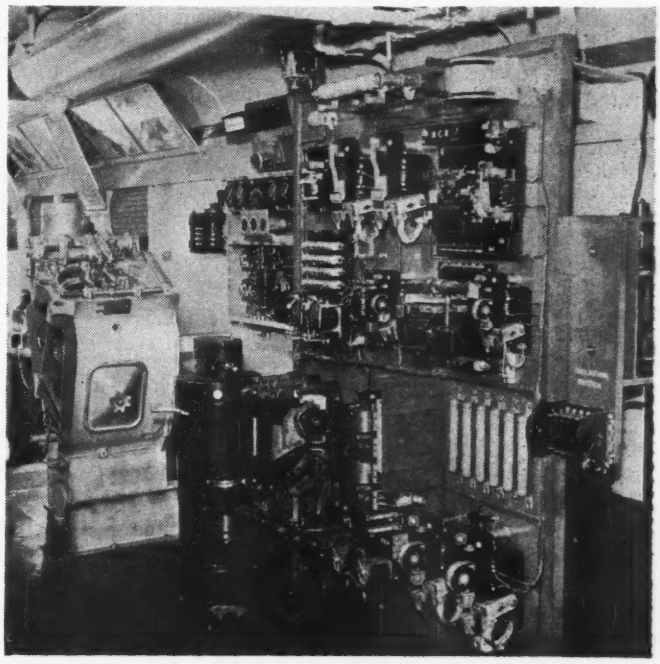
Baltimore & Ohio outfits car for training road and shop personnel — Mechanical and electrical equipment demonstrated with working models — Many, including U. S. Army training groups, have attended instruction classes

EARLY in 1942 the Baltimore & Ohio realized that, as its ownership of Diesel-electric passenger, freight and switching locomotives increased, some means of adequately training the employees who would operate and maintain this equipment was needed. The management, therefore, authorized the expenditure necessary to equip a Diesel instruction car and for the appointment of an instructor. Work on the car was done at the Mt. Clare shop in Baltimore, Md., and the first class was held in the car on June 23, 1942. Since that date the car has been in continuous service at various points on the system with classes being conducted for employees engaged directly in the operation and maintenance of Diesel-electric equipment and supervisors responsible for the proper performance of these duties. A total of 8,000 man-lectures, averaging two and one-half hours in length, have been given to class groups which average about 15 men. Attendance at classes is not required of any men except apprentices, and Diesel-electric shop and road supervisors.

Lecture Subjects

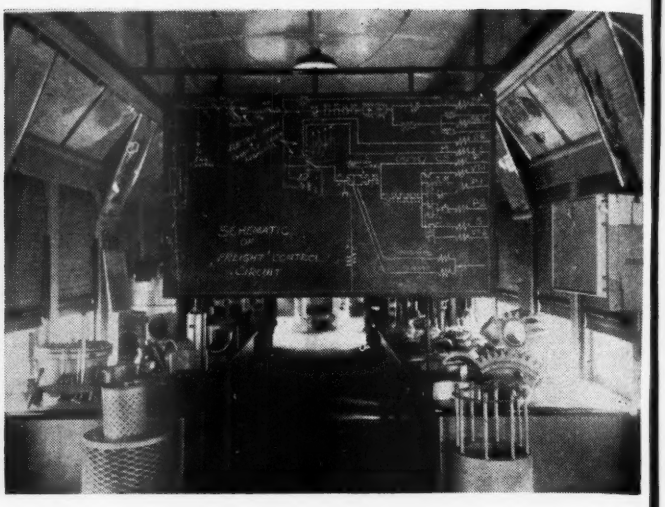
Bulletin-board announcements are made at shop and terminal points of the time when the car is to arrive in a given territory. All employees interested in attending the classes register and the instructor is furnished with all names. Classes are arranged taking into consideration the shifts on which the registrants are working. Although the instruction car has a seating capacity for 20 students, class groups rarely exceed 15 because it has been developed that this is the largest number that can readily observe the various practical demonstrations of the equipment with which the car has been equipped.

A short lecture is given on the subject to be covered at each class, using blackboard sketches, moving pictures, wall charts and, most important of all, actual working or cut-away equipment. After this lecture the class members are encouraged to ask questions to bring into discussion the equipment being studied. The practical demonstrations by use of actual working or cutaway

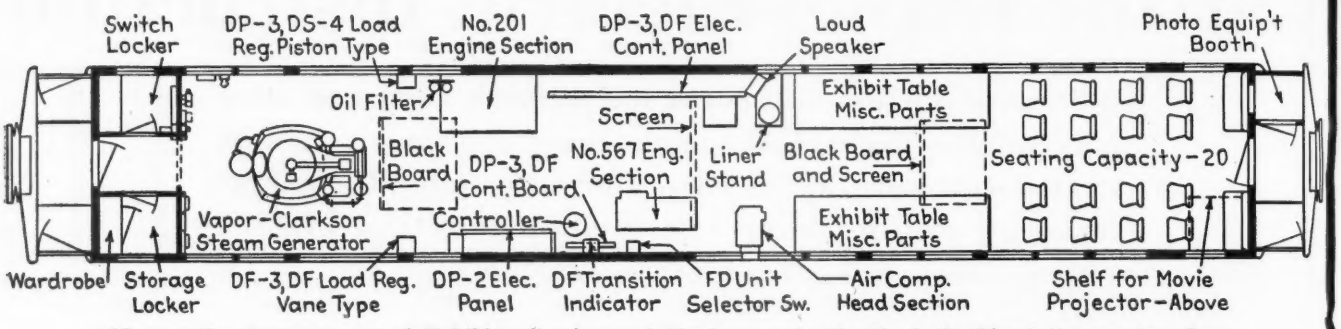


Electric Control Panel for a Passenger Diesel, Engineman's Control Stand and a Cut-away Model of a 567 Type Engine

A Parts Display Is Used During the Lectures and Practical Demonstrations



Blackboards Are Used in the Demonstration Lectures—There Is Also a Screen for the Projection of Moving Pictures



Plan of the Arrangement of Exhibits, Seating and Equipment in the B. & O. Diesel Instruction Car

equipment keeps interest high and the different parts are recognized when seen in actual service.

The tendency on the part of the workmen to adopt the schoolroom attitude of "Here I am, teach me" is carefully avoided and only the apprentices, Diesel supervisors and shop supervisors who are directly connected in the operation or maintenance of these locomotives are required to pass an examination.

Subject matter at each class session is restricted to a limited field. The various discussion subjects are:

Basic principles of the Diesel engine
Maintenance of Electro-motive locomotives with model 567 engine
Maintenance of Electro-motive locomotives with model 201-A engines
Principles of electric operations
Operation of the steam generator
Special training and instructions for Diesel-electric supervisors
Trouble-shooting
Maintenance of Alco Diesel-electric switching locomotives
Maintenance of Baldwin Diesel-electric switching locomotives
Operation of Diesel-electric locomotives (all types)

Army Railroaders Evidence Interest

Most men attend only the classes which are directly applicable to their work, although they are not limited to attendance at such classes and a considerable number have taken all that are offered. In addition to company employees, there has been a total of about 450 other individuals interested in Diesel-electric locomotives who have taken part in all or a number of the discussion subjects.

These include members of a Railway Operating Battalion, U. S. Army, as well as students from Army Specialized Technical Training Groups. Various supply companies and manufacturers have also been represented by sales or service personnel.

Equipment Used in Training

When the instruction car was first placed in service, the greater number of Diesel-electric units operating on the railroad had been purchased from the Electro-Motive Corporation. Cutaway models of both the Model 201-A engine and the Model 567 engine of that company's design were, therefore, the first installed in the car. The models are full size with the Model 567 engine showing the engine frame, crankshaft, main bearing, connecting rods, cylinder liners, pistons and cylinder heads with valves, and the injectors. All operating linkage is shown. In addition, the cutaway of the 201-A engine shows the control and over-speed governors and the electro-pneumatic throttle which operates from the controller. The sectioning of the models is such that the operation of all working parts can be explained and the flow of lubricating oil, fuel oil and cooling water can be followed.

Complete panels are installed to illustrate the electrical equipment required on the various types of passenger power. They are equipped with main contactors, control contactors and relays, voltage regulators, resistors and switches.

A panel which is designed for the demonstration of the electrical control and dynamic brake on freight locomotives and the various appurtenances required for the electric operation of switching power are used to supplement

the explanation of the electric operation of passenger locomotives. A complete working controller which contains the throttle lever, reversing lever, transition control and electro-dynamic brake control, is also installed in the car. The electric panels are operated from the controller by means of battery current and air pressure just as in actual operation. High-voltage operation is effected by means of various relays and switches.

The car is also equipped with a full-size, working steam generator similar to those in use on the road's passenger locomotives. Various cutaway models of parts are located adjacent to the operating plant for use in explaining safety features and the fuel, compressed-air and water lines and controls.

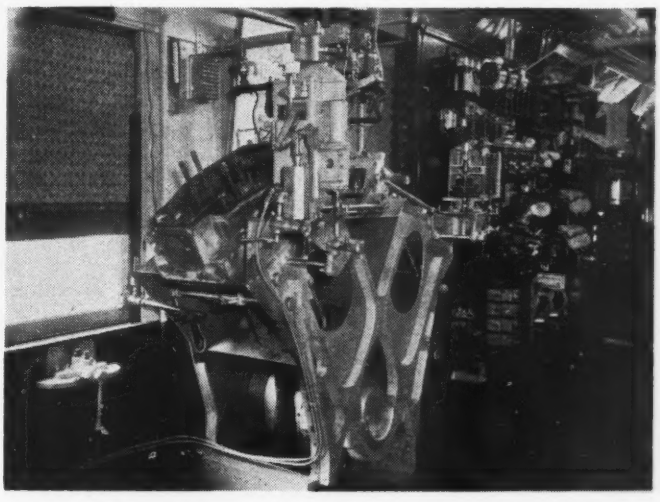
Working Models

There is also an engine control panel complete with all indicating gauges and lights which show the engine lubricating oil pressures and fuel-oil pressures, a transition indicator and warning lights for lubricating oil pressures, engine temperature, boiler operation, wheel slippage and the dynamic-brake overload. Working models also illustrate the operation of engine shutter controls, the hot-journal alarm, the fuel gauge, load regulators, and the air compressor.

The car also carries several mechanical and electrical parts of Diesel-electric locomotives manufactured by the Baldwin Locomotive Works, the American Locomotive Company, and the Electro-Motive Corporation and these parts are used in the class demonstrations to supplement the study of the cutaway models and wall charts. The maintenance tools required in repairing and reconditioning cylinder heads, cylinder liners, pistons, connecting rods, pumps, air compressors, electrical appurtenances, etc., are a part of the car equipment and are used in actual demonstrations.

It is planned, as soon as possible, to add other equipment which will serve more adequately to demonstrate the operating features and repair methods on Alco and Baldwin locomotives.

Mechanical-department officers feel that the excellent showing which has been made both in mileage and availability for service of the Diesel-electric power is due, in a large measure, to the training which has been given to its personnel through the use of this instruction car. It has been especially valuable in the training of the Diesel-electric supervisor riders who are assigned to each road locomotive. Many of these men were within the draft age limits and the turnover has been high but a period of time spent on the instruction car to supplement shop experience has enabled new men to prepare themselves to perform their duties efficiently. Considerable interest has been displayed in this instruction car by other railroads.



A Cut-away Model of the 201-A Engine—The Electrical Control Panel in the Background Is Fully Operative from the Engineman's Control Stand

The Steam Generator Shown at the End of the Car Is in Operating Condition and Is Used in Training

Railroads-in-War News

War Casualties Come First with Railroads

Pelley says nothing will be permitted to interfere with their prompt movement

Railroads look upon the task of transporting the sick and wounded members of the armed services as their "highest responsibility and most important duty, and will allow nothing to interfere with their doing the job to the fullest possible satisfaction of the War and Navy Departments." J. J. Pelley, president of the Association of American Railroads, has so advised Colonel J. Monroe Johnson, director of the Office of Defense Transportation, in a leter made public by O. D. T.

Mr. Pelley said that he knew Colonel Johnson was "in accord" with the railroad position in the matter. The A. A. R. president does not look for "disruption of civilian traffice" but he anticipates that the transportation of casualties "may occasionally interfere with such traffic."

Previously he had outlined for the O. D. T. director the plans set up by the medical and transportation branches of the armed services for the transportation in this country of sick and wounded service men, both those coming from overseas and those being moved between hospitals in the United States.

Arrangements Made in Advance—"From the beginning of the war," Mr. Pelley wrote, "special attention has been given to this problem, and, to some extent, special hospital trains have been provided. Most of such movements, however, have been in Pullman sleeping cars, usually handled on regular trains. It is expected that this will continue to be the case, and accordingly arrangements have been made to insure that space will be available when and as needed.

"The essential points of the arrangement are that the armed services will give the railroads advance notice of movements planned, to the greatest extent possible, but that in any event the railroads will see to it that the necessary bed space is available, regardless of any interference with other traffic which might result. The contacts between railroads serving hospitals and port areas and the medical and transportation branches of the Army and the Navy are established, and the machinery for transmitting necessary information and securing necessary action is set up, both with the individual railroads and with the railroads collectively, through committees of the passenger traffic associations and through the Military Transportation Section of this Association."

Burpee to Run Railroads in France

C. L. Burpee, recently advanced from Colonel to Brigadier General in the Military Railway Service, Transportation Corps, and formerly superintendent of terminals of the Atlantic Coast Line at Jacksonville, Fla., will be in command of railway operations for the Army in France, according to advice to the *Railway Age* from the Army public relations office at headquarters of the European Theater.

General Burpee has heretofore served in the Military Railway Service in the Mediterranean Theater, under command of Brigadier General Carl R. Gray, Jr., director-general of railways.

O. D. T. Order Designed to Speed Pick-up Service

In what was described as the first of a series of expediting orders intended to relieve traffic congestion at important terminal points by speeding the collection and movement of line-haul freight by common carriers, Special Order ODT E-1 of the Office of Defense Transportation became effective June 19. While general in scope, this immediate order was restricted to Fort Smith, Ark., and its commercial loading zone, the O. D. T. explained.

This order, according to the O. D. T. statement, "binds all carriers participating in the collection of line-haul freight, and also affects the shippers. . . . All carriers serving Fort Smith in line-haul service are required by the order to make definite arrangements with the shipper as to time and place shipments will be available for collection prior to attempting such collection."

The rules and practices established by the order include restrictions "on common carriers" from making collections of shipments after 5 p. m. during any calendar day and after 2 p. m. on Saturday, with the provision that any collection commenced at a shipper's loading point before these hours may be completed. Other provisions prohibit collection of freight on the day the order is received if the shipment has not been made available by the shipper at the place designated and at the time agreed upon by shipper and carrier when the order was placed.

It was pointed out that this order affects, in the specified territory, all pick-up services which are parts of line-haul freight movements. It does not apply to delivery of such freight, however.

Railroad Performance Backs the Attack

Carriers made the invasion possible, Army and Navy top officers say

The invasion of Western Europe, as well as other Allied offensives, would have been impossible without railroads, high-ranking Army and Navy officers declared on June 21 during a program over the Mutual Broadcasting System.

Before the Allies could attempt to penetrate "Fortress Europe," said Major General Charles P. Gross, chief of transportation of the United States Army, they had to assemble millions of men and enormous quantities of armament and supplies in the British Isles. To accomplish this, he explained, took a vast amount of transportation, a large and vital part of which was provided by the railroads of the United States, Canada and Great Britain.

Ready for D-Day—General Gross revealed that the number of carloads of Army export freight delivered to our ports by the railroads during May, 1944, was nearly double that of December, 1943. "Plans for the invasion were largely responsible for this great increase," he said. "In fact, probably 60 per cent of this increase in export freight was due to D-Day in France."

This freight, General Gross stated, had to be "moved fast and in response to the ever-changing demands of the theater. Changes were made in the types of equipment and supplies required as plans for the invasion progressed. This meant speed and flexibility in order to get the shipments to England in time for the invasion. But the job was done, thanks to all concerned, and the flood will continue until it is over, over there."

Pointing out that "war traffic is two-way traffic—from the battlefields as well as to them," General Gross said that the American railroads will now be called upon to move the sick and the wounded coming back from the invasion, prisoners of war, and scrap and equipment which can be salvaged.

In addition to assisting the Army prepare for the invasion, the railroads were also of "tremendous" help to the Navy in this respect, according to Rear Admiral William Brent Young, chief of the Bureau of Supplies and Accounts and the paymaster general of the United States Navy.

"The strong arm of the railroads has helped the Navy gain command of the seas, build our storehouse in England, and finally storm the shores of France," Admiral Young said. "The Navy's transportation requirements for the invasion were exacting and difficult. Unusually heavy and un-

wieldy shipments were quite common, because the Navy uses heavier armaments than any other branch of the armed services.

Aid to Ship-Building—"Besides the handling difficulties, the invasion transportation schedule had to be geared to the shipbuilding schedule so the materials required would arrive when and in the order needed. Supplies for our vessels had to reach the docks in time to meet sailing dates. The railroads have never failed to keep these schedules."

One of the outstanding pre-invasion services the railroads rendered for the Navy, Admiral Young declared, was their help in the accelerated landing craft production program, which began last November.

"In this connection," the Admiral reported, "the railroads, with the cooperation of the Military Transportation Section of the Association of American Railroads, performed wonders. They not only moved the materials which went into the construction of the landing craft, but they also hauled the finished products to the ports of embarkation. I am sure nobody has to be reminded of the importance of landing craft since the sixth of June."

At the present time, it was estimated by Colonel J. Monroe Johnson, director of the Office of Defense Transportation, approximately 70 per cent of the railroads' freight traffic and about 50 per cent of their passenger traffic are directly or indirectly identified with the war effort.

"That is why I say railroads are war roads," Colonel Johnson maintained. "That is why, too, everything possible must be done to enable them to carry out their vital wartime responsibilities without unnecessary interference. Today, our railroads are performing 'miracles.' They are doing a job that before the war would have been thought impossible—even by railroadmen."

Travel Keeps on Upward—Expressing the opinion that "the months immediately ahead will be the most critical period in the history of this country," Colonel Johnson went on: "Certainly the war passenger traffic problem will be more serious than ever before. The first three months of this year show an increase in railroad passenger traffic of more than 25 per cent over the same period last year. The summer travel season is now upon us, and the heavy military demands will continue and will grow. All of this, to my mind, presents a passenger traffic job so formidable as to be impossible of accomplishment unless the public cooperates with the transportation agencies and with the government."

The shipping public have been cooperating "magnificently," the O. D. T. director concluded, "but I am sorry to say that the passenger public have not been as cooperative as they might be. There is still too much unnecessary travel, and there is a very real likelihood that this non-essential traffic may interfere with military transportation. Nobody would want that to happen. I believe we can count on—we must count on—the loyalty and patriotism of enough Americans to see us through this transportation emergency."

The program was under the direction of Albert R. Beatty, manager of the Publicity Section, A. A. R., who assured the radio audience that "the railroads will keep vital war traffic moving until victory is won."

British Railway Wages

Requesting a weekly increase of 12s. ($2.42) in the supplementary war wage for railway employees (including shopmen), the three British railway unions—the National Union of Railwaymen, the Railway Clerks' Association, and the Locomotive Engineers' and Firemen's union—in direct and unprecedently speedy negotiations with the railway companies recently reached agreement on a weekly increase of 5s ($1.01), the "Economist" (London) reports. Under the terms of the agreement all categories of adult railway employees received an increase bringing the supplementary war wage up to 25s 6d ($5.15) a week for males, with appropriate increases in rates for juniors. It is estimated the total cost of the new addition is about £10,000,000 a year ($40,400,000).

In 1942, the total wage bill of the main-line railways and London Passenger Transport Board for 655,000 employees, was £170,000,000 ($686,800,000), as compared with £122,000,000 ($492,880,000) in 1938, for 668,000 employees. Average weekly earnings on the main-line railways increased from £3.46 ($13.98) a week to £5.47 ($22.10) in 1943.

Russian Lend-Lease Shipments

From the beginning of the program for supplying American-made war materials to the Soviet Union, that is, October, 1941, up to May 1 of this year, the United States has sent to Russia 10,400,000 tons of supplies, according to a recent report by Leo T. Crowley, Foreign Economic Administrator, whose office handles lend-lease shipments. Included in this total were 414,000 tons of rails, car wheels and axles, and 249 locomotives. The bulk of the tonnage, however, was made up of machinery, steel, and non-ferrous metals.

O. D. T. Field Offices to Handle New Truck Orders

Operators of commercial motor vehicles, other than "integral" buses, who need to purchase new equipment after July 1 should file their applications through the appropriate district office of the Office of Defense Transportation, rather than through the local office of the Bureau of Motor Carriers of the Interstate Commerce Commission, according to an O. D. T. announcement June 23.

The shifting of allocation operations from the I. C. C. to the O. D. T. is expected to effect administrative economies as well as to expedite the processing of applications, the O. D. T. statement explained, this being attributed to the availability of 142 O. D. T. field offices instead of the 80 offices maintained by the I. C. C. All field work incidental to the rationing of new commercial vehicles will be handled by the O. D. T. Highway Transport Department, and applications will be processed in the field according to policies and procedures formulated by that department's Allocation Section. For the past two years such work has been handled by the I. C. C.

In a letter to Commissioner Rogers, who is in charge of the commission's Bureau of Motor Carriers, Assistant Director Richardson of the O. D. T. commended that bureau's co-operation in handling the allocation program from its inception, saying: "It has been most efficiently organized and managed by your district directors and supervisors in their capacity as local allocation officers, and we are fully aware that without their invaluable experienced assistance this office would have found the task almost impossible of execution."

Inter-regional Manpower Shift Conditions Named

Conditions under which the War Manpower Commission will recruit workers for essential industries for migration from one section of the country to another under the "priority referral" system—which, as noted in *Railway Age* of June 10, page 1122, becomes effective July 1—were disclosed in a statement by W. M. C. Chairman Paul V. McNutt released June 23. Under this system the hiring of male workers exclusively through the U. S. Employment Service or its designated agencies—such as the Railroad Retirement Board—becomes a nationwide practice at that time.

It was explained that transfer of workers from one section to another will be controlled by certain specified requirements, and that the W. M. C. regional director originating an order for recruitment outside of his own region must certify to W. M. C. headquarters in Washington, D. C., that these requirements have been met before inter-regional recruitment for a specific employer can be undertaken.

The ten conditions were stated by Mr. McNutt thus:

1. That the employer for whom inter-regional recruitment is requested is making full utilization of his present labor force.
2. That all local sources of labor supply have been exhausted.
3. That the need for workers is hindering, or will hinder, war production.
4. That the number of persons requested represents the employer's actual needs.
5. That the employer's specifications represent the minimum acceptable for performance of the available jobs and the range of wage rates he will pay.
6. That the employer will follow a "recruitment itinerary" arranged by the U. S. Employment Service, will support advertising at recruitment points, and will either send a representative to make hiring commitments or delegate authority to the U. S. E. S.
7. That medical examinations, if required, will be given at the employer's expense at the point of recruitment or at the location of the job, provided that, in the latter case, return transportation will be provided by the employer in case of medical rejection.
8. That, where necessary to the successful recruitment of workers, the employer will provide transportation from the point of recruitment to the location of the job, either outright or as an advance to be repaid from subsequent earnings.
9. That the employer will provide return transportation to workers not accepted upon arrival without just cause for such non-acceptance.
10. That housing facilities will be available for the worker on his arrival at the location of the job.

Needs Will Get Bureaucratic Scrutiny—The announcement went on to say that employers' manpower requests will be subjected to "screening" at W. M. C. headquarters to verify the claim that lack of labor is retarding essential war production

and to determine that equivalent production cannot be obtained from other sources having an adequate labor supply. Furthermore, orders for recruiting outside the employer's locality must be assigned a manpower priority by the national manpower priority committee.

Under the procedure outlined, an employer wishing to avail himself of the recruitment facilities should make his needs known to the local office of the U. S. E. S., or its designated agency, placing an actual order including the specifications of the jobs to be filled. If, after a "reasonable length of time," the required number of men cannot be recruited locally, an "area" recruiting campaign can be undertaken. If this is unsuccessful, the need can be referred to the state W. M. C. director, who either will arrange an intensive recruitment within the state or refer the order to the regional director. If success within the region cannot be attained, the order is then transferred to Washington, provided the employer agrees to the conditions surrounding the inter-regional recruitment program. When a request for inter-regional transfer of workers has been approved at W. M. C. headquarters, the order is then transmitted to whatever region or regions are likely to be most productive of the required workers, the announcement said.

Col. Johnson Continues Campaign to Curtail Travel

The efforts of the Office of Defense Transportation to reduce non-essential passenger travel on the railroads and bus lines to a minimum have been continued during the past week on several fronts, according to announcements by that agency. One statement by O. D. T. Director Johnson particularly urged travelers, and "sightseers and visitors" specifically, to stay away from Chicago during the national political conventions.

While these conventions are being held at a time when other meetings and conventions are being cancelled in co-operation with the O. D. T. campaign to reduce travel, they are an essential part of American political machinery, Col. Johnson pointed out.

Expressing the opinion that the railroads would have all they could do to carry delegates and other persons essential to the conduct of the conventions, he asked families and friends of persons in these approved categories not to accompany them to Chicago.

Railroad executives have joined in this request, the O. D. T. statement added, and they also have suggested that necessary cross-country rail trips be so routed as to avoid Chicago until after the Republicans meet in the week of June 26 and the Democrats meet on July 19.

Bureaus Promise to Help—Referring to the request to curtail the travel of government agency personnel which Col Johnson recently served on all government departments and agencies, as noted in *Railway Age* of June 3, page 1082, the O. D. T. has announced that replies pledging cooperation and noting the procedure used to restrict travel and convention appearances had been received, up to this week, from 31 government departments and agencies, including, in addition to seven of the executive departments headed by cabinet members, such agencies as the National Mediation Board, Railroad Retirement Board, and Board of Investigation and Research.

As previously reported, all public appearances or addresses at conventions or similar gatherings that involve the use of transportation facilities have been discontinued by O. D. T. representatives, with Col. Johnson setting the example by cancelling his acceptance of several invitations to speak at such meetings.

As another step in the drive to reduce travel, the O. D. T. stated June 19 that a letter had been sent to 1,500 leading industrial concerns throughout the country setting forth a 5-point program through which industry is being urged to co-operatae in the campaign. The program includes these measures:

The cancellation of attendance at conventions or trade meetings not essential to the war effort; refusal to attend out-of-town meetings not of direct aid in winning the war; co-operation in the "Make This an At-Home Vacation" program; reduction of business travel to a minimum and elimination of pleasure trips; and confinement of Pullman reservations to specific business needs.

Army Railroaders Have a Song

"Railroaders Always" is the title of a new song adopted by the Military Railway Service of the Army Transportation Corps, and written by two of its members—Capt. R. B. River and Sgt. Joe Tomaselli—as a "sort of salute" to Brig. Gen. Carl R. Gray, director general, M. R. S., in the Mediterranean theatre of operations.

Recording of band and choral arrangements of the new song, as well as other T. C. numbers, are now being made for distribution on all battlefronts, at Ports of Embarkation, training and U. S. O. entertainment centers.

Reports Bill for Transporting Explosives on Passenger Trains

The House committee on interstate and foreign commerce has reported favorably, H.R. 4958, the bill introduced by Chairman Lea of that committee to clarify provisions of the Transportation of Explosives Act relating to the transportation of explosives on passenger trains.

The report reproduces a letter received by Mr. Lea from Director Johnson of the Office of Defense Transportation. The letter reveals that the railroads have since Pearl Harbor met requests of the Army and Navy for expedited service by transporting explosives on passenger trains; but if such service is to be required for the duration, as is expected, the railroads feel that the law should be clarified.

Colonel Johnson points out that the pertinent provision of the explosives act (section 232) "if construed strictly, does not seem to prohibit the transportation of explosives on passenger trains, provided they are not transported in the same car or cars in which passengers are carried for hire, nevertheless it seems to have been accepted quite generally as intended to carry such prohibition except to the extent specifically provided therein."

The O. D. T. director also pointed out that no accidents of any kind have thus far resulted from the carriage of the explosives on passenger trains; and gives assurance that if the bill be enacted "every possible safeguard" would be provided, with the matter of requiring such safeguards left to the Interstate Commerce Commission.

Committee Calls Loading Rule Relaxation Inadvisable

Following a recent meeting in Washington, D. C., of the Pulp, Paper and Paperboard Industry Transportation Advisory Committee, working in connection with the War Production Board, it was announced that the committee was unanimously of the opinion that relaxing the minimum carload requirements of the Office of Defense Transportation on commodities shipped in paper sacks or glass containers, because of the dollar value of the damages attributed to such loading, would be inadvisable at this time.

The committee recommended modification of O. D. T. Order 18-A, insofar as it applies to newsprint and groundwood papers, in order to bring the O. D. T. requirements into uniformity with the Canadian carloading order affecting these commodities. The committee also discussed other transportation problems, including proposed loading requirements for pulpwood in gondola cars, car detention, heavier carloading, and reduction of waste in transportation.

Travel Agencies Can't Guarantee Train Space, O. D. T. Warns

Travel bureaus and agencies claiming or implying that they can assure travel accommodations for their patrons on trains or buses are misleading their patrons, Col. J. Monroe Johnson, director of the Office of Defense Transportation, pointed out this week in a statement which indicated that "numerous complaints of such practices" had been brought to his attention.

"Any suggestions by such bureaus and agencies that the travelers using their services are assured of space on trains and buses are false," he said. In addition to the necessity for meeting all demands for railroad equipment to move wounded men from debarkation hospitals on the eastern seaboard into the interior, a movement that probably will coincide with this year's vacation season, the railroads must continue to handle heavy troop and material shipments, the statement explained, and the result is that:

"The railroads themselves cannot guarantee that space will be available to returning vacationists or other travelers. Obviously, travel bureaus cannot do this. Claims that they can do so are not only misleading, but they may turn out to be of serious consequence to those gullible enough to accept them. Plans made now for vacationing at home will prevent any possible embarrassment later on."

GENERAL NEWS

Santa Fe Freight Train Radio Tests

Communication is maintained between ends on run of 2,200 miles

On June 19, when Santa Fe locomotive No. 3420 pulled into Corwith yard (Chicago), this system completed the first test trip of a loaded freight train in "transcontinental" service equipped with two-way radio-telephone communication between head end and rear of the train. This test, extending over 2,200 miles of line, was begun on June 14, when a train of 68 cars of potatoes left Bakersfield, Cal., equipped with ultra-high-frequency radio broadcasting and receiving sets on the locomotive and rear end.

Data to Guide Development—The purpose was to make preliminary tests of ultra-high-frequency amplitude-modulation radio communication between end to end of freight trains, and determine its efficiency in service, involving a wide variety of physical and atmospheric conditions en route. The work was done under an experimental license granted by the Federal Communications Commission, and the data secured on the trip will be made available to the Railroad panel of the Radio Technical Planning Board, of which the Association of American Railroads is one of the sponsors.

The equipment used in the test consisted of a portable transmitter and receiver, antenna, loudspeakers and remote control units, with a headset at each end of the train. It was powered by a 24-volt storage battery at each end, charged from the 32-volt engine current and similar current from a business car on the rear of the train. The antenna, which were 17½ in. high, were mounted on the roof of the business car and the top of the locomotive tender. At the rear end, two remote-control units allowed both the train crew in the caboose and occupants of the business car to talk to the head end. This was amplitude modulation equipment operated on a frequency of more than 100 megacycles.

Varied Physical Conditions—In the 2,200-mile trip, all types of physical conditions, including mountains, deserts, rock cuts, tunnels and rainstorms were encountered successfully. In addition, various types of power were used, including freight Diesel, freight steam of several types, and passenger steam locomotives. The train also varied in length from 40 to 91 cars, and several tests were conducted at yards when the locomotive was cut off for switching or servicing.

Tests were satisfactory and the ultra-high frequency reception was unaffected by rock cuts, overhead power lines, nearby lightning or the electric motors on the Diesel-electric freight locomotive. In a tunnel 700-ft. long, the equipment was tested while the locomotive was in the tunnel and the rear end of the train outside, and again with the rear end of the train in the tunnel. Concerning the tests, R. B. Moon, West Coast manager of the Bendix Radio Division, Bendix Aviation Corporation, who was on the trip, said, "It has been a generally accepted belief that communication employing ultra-high frequency transmission and reception such as provided by this equipment was possible only between points within line of sight of each other and unobstructed by any large objects. However, it has developed during the tests conducted on this trip that direct line of sight is not necessary for communication over relatively short distances, since the antenna on the engine and caboose were obstructed in some manner at least 50 per cent of the time by deep cuts, curves around mountains, large metallic structures, etc."

F. G. Gurley, vice-president of the Santa Fe, said, "this run is only experimental, and there are many details to be worked out, but this development has many possibilities in easing the work of trainmen and increasing the efficiency of both train and yard operation." T. P. Brewster, superintendent of telegraph of the Santa Fe system, under whose jurisdiction these tests were carried out, stated that the same radio equipment had been used successfully for communication between yardmasters and switching crews at Los Angeles, Cal. In this test, one of the antennae was mounted on a tower 55 feet high, and communication was maintained with switchers as much as eight miles distant.

I. C. C. Service Orders

Service Order No. 212, issued by the Interstate Commerce Commission June 15, directed the International-Great Northern to unload forthwith a car containing honey which had been on hand an undue length of time at Laredo, Tex.

A number of general permits have been issued by the commission's Bureau of Service with respect to Service Order No. 200, the order effective April 24 which generally prohibited reicing of refrigerator cars loaded with potatoes. Among others, such general permits allow one reicing in transit on shipments from Florida, Texas, Arkansas and Oklahoma, while others make more liberal provisions for reicing potatoes shipped from Washington and sections of Idaho and Oregon. These general permits expire at various times from July 1 to October 1, depending on the shipping season of the state concerned.

Railroads Alive to New Communication

P. R. R.'S Triem so insists in statement filed with the Kilgore committee

Referring to recent charges against the railroads made by Assistant Attorney General Wendell Berge and William S. Halstead, a manufacturer of radio apparatus, before Senator Kilgore's (Democrat of West Virginia) subcommittee on war mobilization, W. R. Triem, general superintendent of telegraph of the Pennsylvania, has advised the committee that their testimony "seemed to carry a definite note of unfriendliness and skepticism toward the railroads."

Unmerited Calumny—"It appears unfortunate and incongruous," he said, "in view of the wartime performances of the railroads to resume in this critical period the destructive and demoralizing assault on the railroads which started with the Pecora investigation in 1933 and has since been intermittently taken up from time to time to serve ends which have not necessarily been identified with the public welfare. In the eyes of the country generally our railroads now occupy the position of being recognized as the greatest wartime transportation machine the world has ever seen. When they are functioning so well that it is regarded as almost marvelous, is it not a poor occasion to go out of the way to belittle them and to discourage and distract those who are responsible for their operation?"

Mr. Triem's statement, filed with the committee in anticipation of testimony he expects to give later, made specific reference to two railroad accidents which it was alleged could have been avoided if radio telephone had been available. These views, he said, were unfounded, as was clearly brought out in the inquiry conducted by the Interstate Commerce Commission.

What Isn't, Can't Be Used—"In brief," he said, "the railroads are charged with negligence for not using a method of communication which has not yet been developed to the point of practical usability, and the helpfulness of which in the two selected cases would almost certainly have been nil. Nevertheless, I wish to assure the committee that we on the Pennsylvania—and this is true of other roads as well—are very much alive to the possibilities of developing a workable means of inter-train communication. The Pennsylvania has been exploring the possibilities of using electronic techniques in a carrier telephone system capable of operation on both moving and standing

(*Continued on page 1226*)

Rate "Equalization" Arguments Continue

Southern governors, truckers and other interests tell I. C. C. their troubles

Oral arguments in the Interstate Commerce Commission's general class rate and classification investigations, Nos. 28300 and 28310, continued in Washington, D. C., this week under the 10-day schedule calling for their closing on June 24. As reported in the *Railway Age* on June 17, page 1182, railroad counsel were heard first, their lead-off man being W. L. Grubbs, assistant general solicitor of the Louisville & Nashville.

Railroads Heard—He was followed by turn by three other representatives of the southern roads—Charles Clark, general attorney of the Southern, E. J. Zoll, Jr., commerce attorney of the Illinois Central, and R. B. Gwathmey, general attorney of the Atlantic Coast Line. Mr. Clark highlighted the history of the present class rate adjustment in the South, asserting that this adjustment had stood the test of time and following through to insist that there was insufficient evidence of record to call the southern rates into question.

He also expressed concern that the cost formula developed under the direction of Dr. Ford K. Edwards of the commission's Bureau of Transport Economics and Statistics and placed into the record would continue to be used if the commission were to adopt it in deciding the present proceedings. As Mr. Clark analyzed the Edwards formula, which was said not to square with the facts in its application to the transportation of particular commodities.

Dixie Isn't Depressed—Dealing with the effect of the class rate structures on economic development, Mr. Zoll presented a statistical exhibit which he interpreted as showing that the South in recent years has developed much more rapidly than other sections of the country. More than 1,100 industrial establishments had located there between 1939 and 1941, he said. Also, Mr. Zoll cited an exhibit prepared by Dr. Beatrice Aitchison, daughter of Commissioner Aitchison and a member of the Bureau of Transport Economics and Statistics' staff, to challenge Tennessee Valley Authority contentions that the North drained raw materials from the South, while the rate adjustment precluded the South's manufactured products from competing in northern markets. The latter, Mr. Zoll said, take a larger proportion of the South's manufactures than the southern markets take of the North's industrial products.

With respect to No. 28310's proposed report recommending that the commission prescribe a uniform classification, Mr. Zoll urged the commissioners not to do it. He predicted that dire results would flow from such an order, which he claimed would bring classification ratings that could not be defended on any sound basis. Moreover, he argued that the commission could not on the record make the necessary findings of undue preference and prejudice to condemn the present classification.

Florida "Arbitraries"—General Attorney Gwathmey of the A. C. L. addressed himself to the Florida arbitraries, arguing that the reasons which originally led the commission to allow these additional charges on Florida traffic still existed in that state. This point of view was disputed later on when counsel for Florida interests argued for abandonment of the arbitraries. Such arguments were made by T. C. Maurer and F. C. Hillyer. The latter asserted that the arbitraries were based on 1922 statistics, adding that Florida has since become an important tonnage and revenue producer where the differentials are no longer justified. Meanwhile, Commissioner Aitchison was unable to obtain from counsel what he regarded as a clear statement as to the traffic on which the arbitraries are still assessed. In that connection Mr. Hillyer conceded that the arbitraries applied to a comparatively small amount of tonnage, but he insisted that they have an adverse effect on small manufacturing industries undertaking to gain a foothold.

Getting under way with his argument on behalf of western roads, W. T. Hughes, general attorney of the Chicago, Rock Island & Pacific, assailed the Edwards cost studies as impractical for use in rate cases. He went on to deal with the position of the Southern Governors' Conference, saying that its general contention that the rate structure is retarding the development of the South does not prove itself, especially with a record void of any testimony from shippers who claimed that they were barred by freight rates from locating a plant anywhere in the South.

Rates Not a Sociological Tool—Mr. Hughes saw no reason why railroad rates should be employed to achieve sociological ends, insisting that uniform scales could be based only on uniform economic activity and substantial uniformity in the composition of traffic. In response to a question from the bench, the Rock Island general attorney stated that Dr. Edwards' figures indicated that the application to the West of eastern rates would have wiped out the western roads' 1939 net railway operating income. And Mr. Hughes had previously reworked Prime Minister Churchill's famous remark to say that the western railroad executives had not assumed their positions to preside over the liquidation of those lines.

The general position of the Official Territory roads, as stated by T. P. Healy, general solicitor of the New York Central, was that the extension of the Official scale to the South would work to the disadvantage of northern industries. He pointed out that class rate traffic is more important in Official Territory than in any other section, adding that the Official adjustment had worked and become interwoven into the economic life of the section. He also pointed out that there had been no serious complaints regarding the rate structure in the East.

(*Continued on page 1224*)

Would Accord Carrier Status to Allied Vans

I. C. C. gets advice contrary to that which it received back in 1940

Making his proposed report after further hearing on applications of Allied Van Lines, Inc., Examiner W. T. Croft has recommended that the Interstate Commerce Commission issue to Allied certificates authorizing operations as a common carrier by motor vehicle of household goods over irregular routes between all points in the United States. The proposed report is in No. MC-15735.

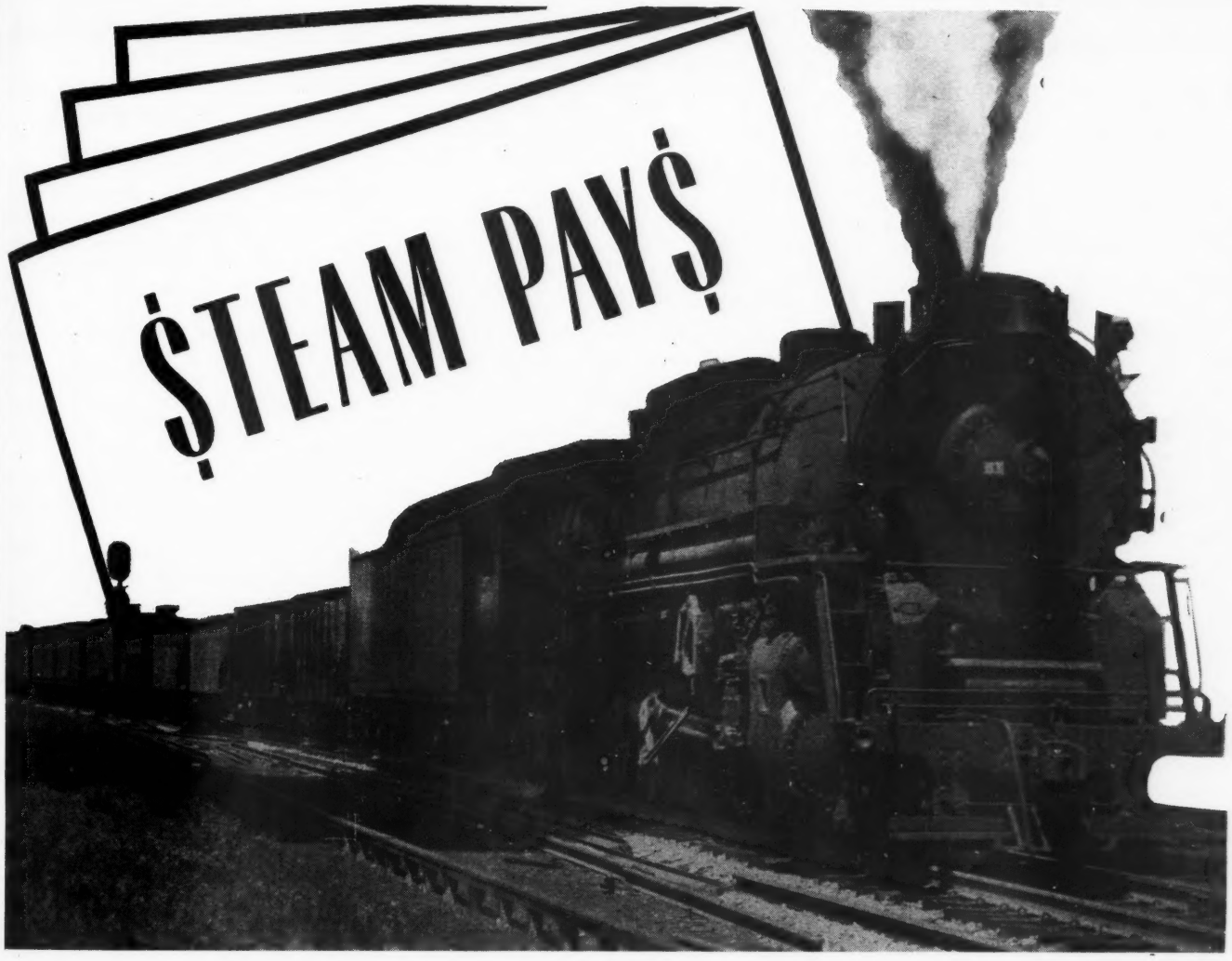
Reverses Earlier Report—Its recommendations are directly contrary to those of the proceeding's original proposed report, made in 1940 by Examiner B. Freidson. As noted in the *Railway Age* of October 12, 1940, page 522, Mr. Freidson had recommended denial of the applications after finding that Allied's undertaking to coordinate the operations of local haulers into a long-distance service for moving household goods made it "merely a service facility" of the National Furniture Warehousemen's Association. [Allied was originally created and had been maintained by members of the Association, but the Croft report states that steps were taken early this year "completely to divorce Allied and the National Association."]

Following service of the adverse Freidson report, the commission disapproved an Allied proposal for the pooling and division of traffic and earnings of the carriers affiliated with it. (See *Railway Age* of October 9, 1943, page 578.) If that pooling plan had been approved, Allied proposed to withdraw its applications for the certificates involved in the present proceeding, which had meanwhile been reopened for further hearing. Allied's applications for the certificates were filed in 1936; and the commission's failure to decide the case more promptly was the basis of the objection raised by Ernie Adamson, counsel for one of the protestants, to confirmation by the Senate of President Roosevelt's reappointment of Commissioner John L. Rogers. Mr. Rogers was confirmed on January 24.

Precedents Cited—Examiner Croft bases his favorable recommendation on Allied's so-called "C-Service," a plan under which it has written agreements with certain of its affiliates who agree to furnish on call certain equipment that may be dispatched indiscriminately by Allied without the usual effort being made to return such equipment to its home base. This "C-Service" and its less formalized predecessor, "B-Service," are found by the examiner to have been extensive (accounting in 1943 for one-fourth of Allied's $9,297,743 gross); and to have qualified Allied for certificates under the rule of the Dixie Ohio decision by Division 5 (17 M.C.C. 735) as amplified by the full commission in the Boston & Maine case (34 M.C.C. 599).

The Dixie Ohio case rule stipulated that where an applicant claims common-carrier

(*Continued on page 1225*)



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Names Douglass to Succeed Leiserson

Mediation Board appointment is confirmed; Schwartz made new chairman

The nomination of Frank P. Douglass of Oklahoma City, Okla., as a member of the National Mediation Board succeeding Dr. William M. Leiserson, which was received by the Senate late last week, was confirmed by that body on June 21. Speculation as to who would be named to this post, which had been rife since Dr. Leiserson's resignation became known, was thus set at rest by a selection that had not been widely forecasted. Meanwhile, on June 19, the board announced that Harry H. Schwartz has been chosen as chairman for the fiscal year beginning July 1.

Schwartz Is Chairman—The Railway Labor Act requires the board to select a chairman annually, it was pointed out, and the designation of Mr. Schwartz was explained as being in conformity with a policy of rotating the chairmanship. The newly-elected chairman was formerly a Senator from Wyoming, being defeated for re-election in November, 1942. In February, 1943, he was appointed to the Mediation Board by President Roosevelt for the unexpired term of Otto S. Beyer, who had resigned from the board to continue in the post he then held as director of the Division of Transport Personnel of the Office of Defense Transportation. This appointment ran to February 1, 1944.

Although so-called "Senatorial courtesy" normally leads that body to confirm the appointment of a member or former member to another government position as a matter of form, the nomination of Mr. Schwartz to the board was a subject of considerable controversy, on the ground that he had been, it was said, a New Deal "rubber stamp," and his confirmation by a vote of 46 to 20 followed a heated discussion, as was pointed out in *Railway Age* of March 6, 1943, page 477. This year, however, when he was reappointed by President Roosevelt for the full three-year term expiring February 1, 1947, there was no such manifestation of opposition to confirmation.

The Brothers Disagree—The nomination of Mr. Douglass was for the unexpired portion of Dr. Leiserson's term, which terminates February 1, 1946. The latter's resignation, as noted in *Railway Age* last week, was accepted by the President to become effective when his successor qualifies for office. Its announcement was followed by lively discussion of possible successors, in which the names of Frank M. Swacker and Dr. I. L. Sharfman perhaps were most prominently mentioned. It was understood that the split between the leaders of the five railway operating brotherhoods, which gained in depth during the negotiations that led to "arbitration" of the wage disputes by President Roosevelt at the year's end, was reflected in the support behind these two former Emergency Board chairmen, with the trainmen's and engineers' spokesmen, who had fallen into line with Mr. Roosevelt's proposal to settle the terms of the wage increase himself, championing Mr. Swacker, while the three "die hard" brotherhoods which had accepted the President's intervention in the wage case with some reluctance were represented as favoring the appointment of Dr. Sharfman.

When reports were circulated that the White House was disposed to send Mr. Swacker's name to the Senate for confirmation, Senator Wheeler, Democrat of Montana, the chairman of the committee on interstate commerce, to which the nomination would be referred for its consideration and recommendation, was quoted as saying he would be "compelled to oppose confirmation" of this nomination, and a meeting of the Railway Labor Executives Association on June 15 was said to have had the shaping of a program of active opposition to Mr. Swacker's appointment as a major objective. Mr. Douglass' nomination was received by the Senate on June 16.

While he was referred to as having been active in Democratic politics in Oklahoma, in which state he at one time held a judicial appointment, Mr. Douglass has served in various proceedings under the Railway Labor Act and was a member of the Emergency Board selected in 1943 to consider the wage dispute between the Brotherhood of Railroad Trainmen and the Pacific Electric.

Mr. Douglass as a referee for the Adjustment Board at one time aroused considerable opposition among railway members of the Board by the character of his decisions, notably in so-called "pay for work not done" cases. Management representatives filed 12 dissenting opinions in a number of cases which he decided, in 1935, involving Rock Island switchmen; and carrier members joined in filing a protest with the Mediation Board, asking that he be not appointed referee in any future cases. This protest was ignored, the N. M. B. designating him referee in some subsequent cases.

"Roving" Information Clerks Help Chicago Travelers

As a means of aiding the increased number of inexperienced travelers, the Chicago Union Station has introduced "roving" information clerks, girls specially trained and distinctively garbed who circulate among travelers frequenting the station and waiting rooms. Six clerks have already been employed and more will be added from time to time. They will disseminate information regarding train schedules, rail fares and local transportation facilities.

House Gets Air Bills

Separate bills to establish a new regulatory set-up for air transportation and to create a federally-chartered private air line with a monopoly of American operations in the field of international transport have been introduced in the House by Representative King, Democrat of California. They are H. R. 5030 and H. R. 5038. Like bills, sponsored by Senator McCarran, Democrat of Nevada, are pending in the Senate as noted in *Railway Age*, June 3, page 1091.

I.C.C. Holds Control of Trucker Is Illegal

Relations of U. S. Freight and Interstate Motor Freight are ordered severed

Control of Interstate Motor Freight System by the United States Freight Co., a holding company which controls the Universal Carloading & Distributing Co., and various other firms engaged in freight forwarder and motor carrier operations, was accomplished and is continuing in violation of sections 5(4) and 411(a) of the Interstate Commerce Act, according to a report of the full commission, without dissent, in its No. MC-F-2181 and related proceedings.

The Law Is Cited—As noted in *Railway Age* of May 8, 1943, page 922, an investigation of the relationship between these companies was instituted by the commission, the specific issue being whether control or management in a common interest of Interstate and other carriers or forwarders controlled by the parent corporation constituted violation of those provisions of the statute making it "unlawful for a freight forwarder, or any person controlling, controlled by, or under common control with a freight forwarder, to acquire control of a carrier subject to part I, II and III" of the act, with the exception that carriers subject to parts I, II or III are not thus prohibited from acquiring control of other carriers subject to these parts. Elsewhere the act so defines control as to include any form whatever of direct or indirect control or management in a common interest.

Interstate is described in the report as a motor vehicle common carrier of general commodities over regular routes in 18 states, principally east of the Mississippi river, and over irregular routes between points in the same general territory. Its operations "have been closely identified with transportation of traffic for various freight forwarding companies, principally National Carloading Corporation," from which it at one time derived about 50 per cent of its total revenues and still derives about 25 per cent. The report points out that National Carloading is a competitor of freight forwarders controlled by U. S. Freight.

Corporate History—According to the report, Interstate controlled certain other trucking companies. Substantially all Interstate stock was held by Harry Bylenga, who also owned controlling stock interests in other truck lines, and court proceedings were pending early in 1943 to require him to dispose of such control of all except one motor carrier. In February and March, 1943, Bylenga sold 45 per cent of Interstate's common and preferred stock to U. S. Freight and 21.65 per cent to the Hickok Oil Corp., retaining 33.35 per cent for himself and immediate family. The Hickok Oil Corp., which is a marketer of petroleum products associated with the Pure Oil Co., owns control of several oil distributing

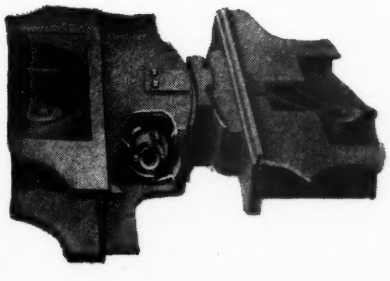
News Department continued on next left-hand page

RALPH P. JOHNSON

Chief Engineer, The Baldwin Locomotive Works

In his book on THE STEAM LOCOMOTIVE *states:*

"WITH certain types of radial buffers, properly maintained, between engine and tender, the tender properly becomes part of the locomotive mass. While no account is taken of this in counter-balance calculations, it provides a factor of safety for the absorption of the inertia effects of the reciprocating parts."



THE Franklin E-2 Buffer meets this requirement, and also provides free flexibility between engine and tender to compensate for curves and turnouts.

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firms, and is related through common directors and interests in stock to certain motor carrier firms, engaged principally in the transportation of automobiles and parts.

On May 13, 1943, after the commission had instituted its investigation of these transactions, a voting trust was set up under which the Interstate stock held by Bylenga and Hickok Oil, amounting to 55 per cent of the amount outstanding, was transferred for a period limited to 5 years to a trustee, who is the president of one of the oil companies controlled by Hickok.

U. S. Freight is described in the report as a holding company which controls Universal Carloading & Distributing Co. and other freight forwarders and holds 49 per cent of the stock of seven active motor carriers; 49.56 per cent of the capital stock of U. S. Freight, in turn, is held by Balthasar H. Meyer, a former member of the commission, as trustee for the New York Central. While the Hickok Oil Corp. itself does not own stock in any common carrier other than Interstate, the commission holds that there is a community of interest between individuals dominating the management of Hickok and of such carriers sufficient to make it reasonable to believe that joint control is exercised.

Held for Investment?—The commission did not accept the contention of Hickok and U. S. Freight that their respective purchases of Interstate were for investment, and that control of Interstate rests in the voting trustee, not in either company. Its report called attention to the fact that the territory served by Interstate is substantially the same as that served by the New York Central, and that "a compelling reason" for the desire of U. S. Freight to control Interstate was to "make available in the territory another mode of transportation for traffic" controlled by Universal Carloading & Distributing Corp.

"We conclude," the commission says, "that the purchases of Interstate stock here in question were not made solely for investment. Certain of the respondents, in full knowledge of the pertinent statutory provisions, proceeded to make the arrangements disclosed without first seeking authority as provided by the act.

The order accompanying the report requires (1) the parties to "cease and desist" from further violations of provisions of the act concerning common control of forwarders and carriers, (2) termination of the voting trust, and (3) sale by Hickok and U. S. Freight of all interest either has in Interstate stock.

The Trunk Line Position—The Trunk-Line Territory states of New York, New Jersey, Pennsylvania, and Maryland, which oppose any changes in the rate structure or classification, were represented by Parker McCollester of New York. He spoke also for the Chamber of Commerce of the State of New York. Generally Mr. McCollester took the position that the commission on the record could make no order in either 28300 or 28310 that the present rate structure and classification are unlawful.

The commission, he said, does not sit as traffic managers of the railroads; it cannot order a change merely because it disagrees with railroad management, or because it thinks a different adjustment would be better for the general economy. He went on to suggest that the "very scope of the proceedings" may afford a temptation to do something, that temptation being enhanced by the fact "that it does strike a person who doesn't know much about it that it is strange that we do have different territorial rate levels."

Also, Mr. McCollester mentioned the "territorial aspects" of the case, noting that former Commissioner Eastman's death left but one commissioner from Official Territory. He is confident, however, that the commission won't divide on sectional lines. Later on Mr. McCollester denied that the commission has the authority to use freight rates to "remake the map of the country," adding that "even if it did," the record would support no action of that kind. In Mr. McCollester's opinion, freight rates should follow the development of industry, in which connection he cited evidence that industry in the North developed first and the North's freight-rate adjustment evolved afterward.

"Infirmities" in Edwards Formula—He also reviewed data which he interpreted as showing that the class rate structure is relatively more important in the North than in the South, insisting that an adjustment of class rates must contemplate also a revision of commodity rates. And he emphasized that the commission could not thus deal with the whole structure in the present proceedings where commodity rates are not in issue. As for the Edwards cost-finding methods, Mr. McCollester conceded that they were generally in accord with good accounting practice, but he nevertheless insisted that infirmities were not thereby excluded. And he proceeded to argue that the "infirmities" were such as to preclude reliance on the figures for practical application to the present case.

Mr. McCollester's argument was followed by the commission's acceptance for the record of a statement by Attorney General William C. Walsh of Maryland. Mr. Walsh concurred in the McCollester argument and went on to stress "the more important aspects of Maryland's interest" in the case. Arguments then came from other Official Territory interests opposed to any changes, including Philip Porter, representing the Central Territory.

Rate Conference, comprised of shippers, traffic organizations and chambers of commerce in Ohio, Illinois, Michigan, Indiana and Wisconsin; H. A. Hollopeter, representing the governor of Indiana, and Assistant Attorney General Kenneth L. Sater of Ohio.

Equipment on Order

Class I railroads on June 1 had 43,444 new freight cars on order, according to the Association of American Railroads. On the same date last year they had 33,537 on order. This year's June 1 total included 14,749 hopper, 4,820 gondolas, 700 flat, 18,507 plain box cars, 2,968 automobile box cars, 1,200 refrigerator and 500 stock cars.

The Class I roads also had 643 locomotives on order on June 1, compared wi 937 on the same day in 1943. The form figure included 203 steam, two electric a 438 Diesel-electric locomotives, compar with 418 steam, seven electric and 5 Diesel-electric locomotives one year ago.

Class I roads put 12,263 new freight ca in service in the first five months this ye compared with 7,484 in the same peri last year. Those installed in this year first five months included 7,371 hoppe 709 gondola, 815 flat, 540 automobile bo 2,665 plain box, and 162 refrigerator ca and one other car.

They also put 417 locomotives in ser ice in the first five months of 1944, of whi 166 were steam, one electric and 250 Dies electric. Locomotives installed in the fir five months of 1943 totaled 251, of whi 178 were steam, 11 electric and 62 Dies electric.

Rail Travel Situation Seen As Slightly Improved

Hugh W. Siddall, chairman of the Tran Continental Passenger Association, Chicag issued a statement last week in which h reported that while civilians should refra as much as possible from railroad trav any further tightening of passenger ra accommodations during the next few month will depend on the government's dema for sleeping cars for the transportation war casualties.

"The program for the transportation wounded men, as set up by the Army a Navy, virtually precludes any interferen with passengers who already hold rese vations or are able to make them in t future," Mr. Siddall said. "Requiremen for the movement of war casualties a being anticipated several weeks in advanc enabling the railroads to determine wh space can be sold to the traveling public."

The unexpectedly small casualty li which resulted from the invasion is fu ther reason for believing that, while th movement of wounded men will be the fir consideration, it can be accomplished wit out the need of commandeering space a ready sold to civilians.

Report Progress in Cleveland Stockyards Dilemma

Without prejudice to the interests of a of the parties concerned, the railroads ser ing Cleveland, Ohio, and the Livestoc Terminal Service Co. have joined in petition to the Interstate Commerce Com mission for rehearing, reconsideration a redetermination of reasonable charges fo loading and unloading livestock at Clevela as of June 19 of this year. Meanwhile th service company and the Cleveland Unio Stock Yards Co., the owner of the facilitie which it has been operating, will perfect a arrangement to enable the service compan to continue its operations for at least 6 days, the petition stated, and during thi time all parties concerned will endeavor t reach some permanent arrangement, mutu ally satisfactory to all, for handling live stock at Cleveland.

As noted in *Railway Age* of May 2 page 1044, Division 4 of the commissi has authorized the service company abandon its operation of the livestock u loading facilities at the Cleveland stock

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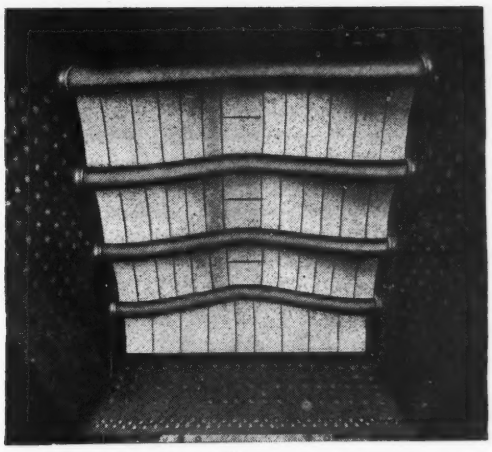

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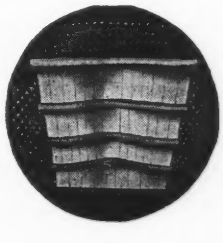

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yards, but at the same time has made it clear that responsibility for the continued operation of these facilities rests upon both the railroads serving that point and on the stockyards company, which formerly performed the unloading service.

Freight Car Loading

Loadings of revenue freight for the week ended June 17 totaled 879,161 cars, the Association of American Railroads announced on June 22. This was an increase of 4,968 cars, or 0.6 per cent, above the preceding week, an increase of 10,875 cars, or 1.3 per cent, over the corresponding week last year, and an increase of 34,248 cars, or 4.1 per cent, above the comparable 1942 week.

Loading of revenue freight for the week ended June 10 totaled 874,193 cars, and the summary for that week as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading

For the Week Ending Saturday, June 10 District	1944	1943	1942
Eastern	163,688	165,276	155,010
Allegheny	195,150	186,764	183,504
Pocahontas	56,999	57,244	57,102
Southern	121,335	119,079	120,990
Northwestern ..	134,951	134,313	135,845
Central Western	128,016	121,678	114,866
Southwestern ..	74,054	70,132	65,318
Total Western Districts	337,021	326,123	316,029
Total All Roads	874,193	854,486	832,635
Commodities			
Grain and grain products	43,895	45,466	34,684
Live stock	14,143	12,891	11,133
Coal	182,601	170,513	166,766
Coke	15,177	13,794	14,102
Forest products.	47,826	44,298	49,295
Ore	83,001	87,347	86,285
Merchandise l.c.l.	104,156	98,763	94,556
Miscellaneous ..	383,394	381,414	375,814
June 10	874,193	854,486	832,635
June 3	810,772	667,609	854,689
May 27	869,860	853,783	795,621
May 20	871,105	843,842	837,676
May 13	868,309	849,032	839,054
Cumulative Total, 24 Weeks ...	19,290,966	18,471,252	19,365,070

In Canada.—Carloadings for the week ended June 10 totaled 71,658 as compared with 70,579 for the previous week and 69,632 for the corresponding period last year, according to the compilation of the Dominion Bureau of Statistics.

Totals for Canada	Total Cars Loaded	Total Cars Rec'd from Connections
June 10, 1944	71,658	37,278
June 3, 1944	70,579	37,210
May 27, 1944	67,952	38,454
June 12, 1943	69,632	39,438
Cumulative Totals for Canada		
June 10, 1944	1,582,850	909,135
June 12, 1943	1,449,906	899,414
June 13, 1942	1,456,502	742,611

Wages Raised on U. S. Lines in Canada

The Dominion War Labor Board at Ottawa has authorized wage increases to employees of railway lines owned in the United States but traversing portions of Canada—to bring such wages up to the levels provided for U. S. railroad employees in last January's wage agreements. Most of the traffic handled on these lines both originates and terminates in the U. S., and these employees come under the provisions of the U. S. Railway Labor Act, including pension provisions.

These employees received the December, 1941, wage increase to U. S. railroad employees; and they are excluded from the cost-of-living bonus arrangements made for employees of other Canadian railroads. In granting these increases the Board makes it clear that it will not take them into account in its consideration of wages for other railway employees in Canada.

The railroads involved are the N. Y. Central System, Pere Marquette, Wabash, Great Northern, the Vancouver, Victoria & Eastern, the Nelson & Fort Sheppard, and the Midland of Manitoba.

Delays Intrastate Fare Increase Until August 1

At the request of District Judge Miller, Commissioner Porter, acting for the Interstate Commerce Commission, has postponed until August 1 the effective date of the commission's order in its southern intrastate passenger fare proceedings, Nos. 28963, 29000, and 29037, which would require railroads in Alabama, Kentucky and Tennessee, respectively, to increase intrastate fares to the level of the interstate fares approved by the commission in its Ex Parte 148 findings, despite the objections of the state regulatory authorities concerned. The original effective date of the order was July 1. Similar action with respect to No. 29036, the proceeding having to do with the same situation in North Carolina, was reported in *Railway Age* of June 17, page 1189.

Derailment Results from Track Irregularities

The derailment of a Louisville & Nashville passenger train near Keeling, Tenn., on April 27, which resulted in the death of two employees and the injury of 29 passengers and 9 employees, was caused by a combination of flange wear on the gage side of the high rail of a curve and irregularities in alinement, surface and gage of the track, according to a report of an investigation conducted by the Interstate Commerce Commission under the supervision of Chairman Patterson.

Rail Laid in 1915—The train involved was No. 198, the northbound Memphis section of "The Pan-American." The derailment occurred at a point 41.55 miles north of South Memphis, on a single-track main line that consisted of 90-lb. rail, laid in 1915 on 18 treated ties to the rail length. It was fully tieplated, single-spiked and ballasted to a depth of 12 in. with slag. Approaching the point of the accident on an ascending grade varying from 0.48 per cent to 0.37 per cent, the train passed in succession over a tangent 4,447 ft. long, a 2-deg. curve to the right 931 ft., a 265-ft. tangent, and a 2 deg. 8 min. curve to the left 393 ft.; the latter curve continued 229 ft. beyond the point where the derailment occurred.

The maximum authorized speed for this train was 70 m. p. h., and it was moving at an estimated speed of 60 m. p. h. at the time of the accident. It was indicated that the rear wheels of the engine truck of the 4-6-2 type locomotive were first derailed, after which the train continued about 432 ft. to the frog of a siding switch, where a general derailment occurred, with the engine coming to rest on its side with the front end 365 ft. beyond the switch. Of the seven cars in the train, the first five and the front truck of the sixth were derailed, but all the cars stopped practically upright. The engine and tender and the first two cars, a passenger-baggage car and coach, both of steel construction, were considerably damaged.

Irregularities Recorded—The investigation disclosed that a track car fitted with automatic recording devices had operated over the line involved a week before the accident, producing a record that showed numerous irregularities throughout one mile immediately south of the point where the derailment occurred. Altogether the engineer in charge of the test car had marked 38 irregularities, as indicated by the recording tape, for corrections to be made in the surface, alinement and cross-level of this one-mile length of track, but, the report remarked, no track repairs were made in that territory between the test and the time of accident.

The gage side of the high rail of the curve at the point of derailment was worn between 3/8 and 1/2 in., the report stated, and the angle of wear closely coincided with the shape of a flange of full contour. Throughout a distance of 93 ft. to the south the gage varied between 4 ft. 8 1/4 in. and 4 ft 8 3/4 in. In addition, there were indications of lateral movements of the base of the rail on the ties of as much as 1/4 in. Altogether, the investigation concluded, the effect of the changing curvature of the track, the irregularities in surface, alinement and gage, and the existence of a flange of full contour on the right rear engine-truck wheel contributed to circumstances under which the engine, moving at equilibrium speed for the conditions present, pivoted and rolled laterally far enough for the wheel to be forced across the rail.

Mineral Leasing Act Amended

President Roosevelt has signed S.1335, a recently-enacted bill to liberalize those provisions of the mineral leasing act of 1920 which relate to coal mine holdings of railroads. Under the amendment, the limitation on railroad holdings will be on an acreage rather than a miles-of-line basis.

Senate Refuses to Leave F.E.P.C. Without Funds

The Senate after extended debate on the matter voted down on June 20 a proposal by Senator Russell, Democrat of Georgia, to delete from the National War Agencies fiscal 1945 appropriation bill the $500,000 approved by the House for President Roosevelt's Committee on Fair Employment Practice. Mr. Russell did, however, succeed in having adopted other amendments designed to cramp the style of the committee.

Speaking in Baltimore, Md., on June 18, Malcolm Ross, F. E. P. C. chairman, reviewed some of the work of that committee. Discussing the hearings and "directives" which marked its intervention in cases of alleged discrimination on account of race against negro railroad employees, he said: "In some of these jobs, as long as negroes wore blue overalls and shoveled coal, they could be kept employed. As soon as automatic feed and Diesel-powered locomotives came on the scene, the jobs became 'too good' for negroes, and whites were used instead. Other evidence before the com-

News Department continued on next left-hand page

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Ten 2-10-4 type locomotives were recently placed in service on the Bessemer & Lake Erie Railroad between the lake ports and Pittsburgh district . . . all were equipped with Elesco exhaust steam injectors for greater boiler capacity.

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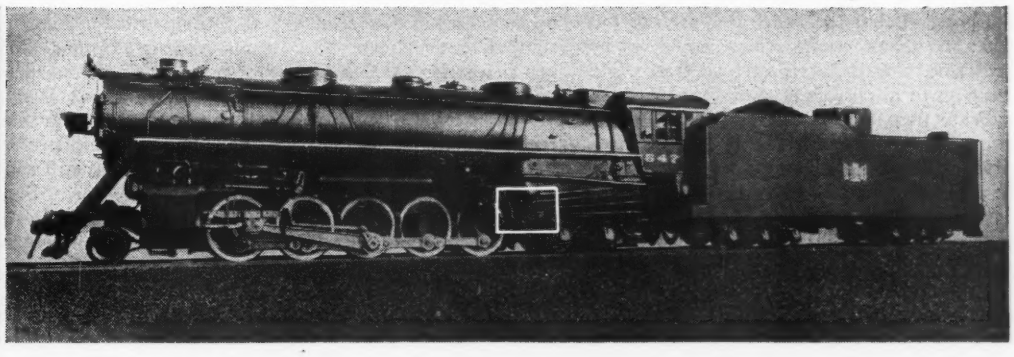

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mittee concerned discrimination against negroes in shop crafts, dining car service, and in the operating categories of brakemen, flagmen and yardmen.

"In the beginning, there were cases against 23 railroads," he continued. Two were handled without hearing, he explained, and, after hearing, "it was necessary to issue directives" to twenty roads. "Only fourteen of the twenty chose to ignore the committee's directives," Mr. Ross added. These were certified to the President, who turned the situation over to a special committee for a solution, which is yet to be reached. "Thus, out of twenty-three railroads, nine are seeking ways to remedy discrimination in co-operation with the committee," he pointed out.

As a result of the committee's activities, he said, "negroes who worked as helpers are now machinists, colored employees who sought jobs as boilermakers now have them, waiters who were qualified have become dining car stewards and many new jobs have been opened for available manpower." Mr. Ross did not report to his audience what success the committee had in obtaining the cooperation of the railway brotherhoods, either in its public hearings, in voluntary negotiations, or as a result of its "directives."

Rate "Equalization" Arguments Continue

(*Continued from page 1220*)

J. F. Eshelman, assistant general counsel of the Pennsylvania, followed Mr. Healy to discuss the l.c.l. adjustment, including questions as to whether there should be a single l.c.l. and carload scale and whether the l.c.l. scale should reflect full costs. Although he noted that No. 28300 is not a minimum rate proceeding, Mr. Eshelman nevertheless pointed out that the full-cost question had arisen because of motor carrier contentions that railroad l.c.l. rates are too low.

L.c.l. Traffic Pays Its Way—The eastern roads, as Mr. Eshelman put it, take the position that the l.c.l. rates are not too low; and that separate scales should not be prescribed for l.c.l. and carload traffic. He went on to discuss figures of record, which indicate that 69 per cent of the l.c.l. revenue comes from traffic rated 65 per cent of first class and higher. The l.c.l. traffic, he insisted, not only pays its out-of-pocket costs and pick-up and delivery expenses, but it also makes a substantial contribution to other expenses. Moreover, he cited prospects for greater operating efficiency in the future when the Pennsylvania expects its average load per l.c.l. car to be from 10 to 13 tons; it was up to 6½ tons before the war.

Arguments on behalf of the Southern Governors' Conference were made by J. V. Norman and W. H. Wagner. It was inconceivable to Mr. Norman that the commission should do nothing, as argued by railroad counsel, in view of the fact that the investigations were instituted on the commission's own motion. The southern governors as he put it, were asking that the "arbitrary line from Cairo to Norfolk" be wiped out. He insisted that the cost evidence shows that the present rate adjustment cannot be justified on the basis of transportation conditions. Mr. Norman did not challenge the southern roads' claim that they have the interests of the South at heart; but he does not believe they have shown "courage and vision" in promoting the development of that section.

Arguing also for uniform rates and ratings on the official basis, Mr. Wagner asserted that the traffic figures refute the claim that the present structure does not drain the South of raw materials for manufacturing in the North. Commenting on the claim that the large shippers of the South have no complaint, he replied that southern class-rate shippers, unable to compete with northern industries, get no comfort out of the fact that some southern shippers enjoy a suitable commodity-rate adjustment. Dr. Edwards' studies, Mr. Wagner said, showed the l.c.l. costs in the South to be 16 per cent lower than in the East, and the l.c.l. "deficit" to be smaller than in any other section.

In closing Mr. Wagner reminded the commission that it now had before it in the two proceedings all issues as to the rate structure. As he saw it the commission thus had an opportunity to "bring cosmos out of the chaos."

Politics in the Picture—State commissions of the states included in the Southern Governors' Conference were represented by Chairman W. R. McDonald of the Public Service Commission of Georgia. He first told the commission that southern interests had "camped on the steps of the Capitol" until Congress appropriated funds for the commission's cost studies; and proceeded to recall that the Democratic platform of 1940 had a plank pledging the elimination of freight rate "discriminations."

Mr. McDonald denied the contention that the southern governors and the state commissions do not represent public opinion in the South, asserting that the commodity-rate shippers who defend the present adjustment "have nothing to lose in this case," where commodity rates are not involved. The only way in which the South can improve its economic situation is through a continuing development of its manufacturing industries, Mr. McDonald said. And he ridiculed some of the statistics of southern industry's recent growth, saying they reminded him of the story about the county which had a fifty per cent death rate on sheep in a particular year; but there were only two sheep in the county.

Senator Tom Stewart, Democrat of Tennessee, was allotted 20 minutes for argument, but he filed a statement instead. The statement took the position that the 1940 amendment to the Interstate Commerce Act's section 3, which added "region, territory, and district," to the areas against which discrimination is prohibited constituted "a real and substantial change in the basic law against discrimination." It was thus Mr. Stewart's contention, in effect, that the commission had a mandate to adjust interterritorial rates.

Mr. Hillyer, whose argument on Florida arbitraries was noted above, also represented the Southern Traffic League in association with T. M. Henderson. The latter made only a brief statement as to the character of the League as representative of southern shippers. Mr. Hillyer used the Edwards cost figures to support his contention that the costs in the East are higher than in the South, but he did not go so far as to suggest that the Eastern rate level should thus be made higher than the South's.

In response to a question from the bench, he said that the cost figures would justify a higher official basis; but he added that the interests he represents "want to be fair to our northern neighbors," who understand that "we are not advocating increases for them." As Mr. Hillyer sees it, the "easiest practicable decision is to put us on the official scale."

Favors Fewer L.c.l. Classes—L. F. Orr, special counsel for Kentucky, argued that that state is entitled to the Official basis of rates without differential or arbitraries. It now has the Southern basis (modified downward) for interstate rates and the Official basis intrastate. In support of his contention Mr. Orr cited the Edwards figures which showed that railroad operating costs in Kentucky are lower than elsewhere in the South. Mr. Orr also favored uniform classifications, separate for l.c.l. and carload traffic; and different rate bases for carload and l.c.l. He thinks four classes for l.c.l. would be enough (the express tariffs "only have three"); and he believes carload classifications might well be based on density with incentives to encourage heavy loading.

The Southwestern Steering Committee was represented by J. C. Murray, B. M. Gray, and C. B. Bee. They argued that the rates and classification must be considered together, and advocated a uniform classification and uniform mileage scales of class rates applicable as maxima throughout the country. Pending publication of a new uniform classification, they asked that the Official Classification and scale of rates be prescribed. With respect to the classification, the committee adopted the proposed report in 28310, with the exception of the number of classes there proposed, which is 30.

Then came counsel representing individual Middle Western states and cities, grouped together on the argument schedule as "Western Trunk Line interests advocating changes." They spoke for Iowa, North Dakota, South Dakota, Nebraska, the Twin Cities, Minn., Duluth, Watertown, S. Dak., Mitchell, Topeka, Kan., and Wichita, laying before the commission various rate and classification problems peculiar to their respective localities. The only listing of "Western Trunk Line interests not seeking changes" was the Chamber of Commerce of Kansas City, Mo. If the latter had its preference, it would like to see the proceeding dismissed; for "we are generally satisfied," as J. H. Tedrow, its counsel, put it.

Intervening motor carrier interests—American Trucking Associations, Inc., and its affiliated motor rate bureaus except the New England Motor Rate Bureau—were represented by J. R. Turney, Charles E. Cotterill, and A. L. Reed. The latter discussed in the main the contention of the motor interests that the present classifica-

tion is unlawful, and that there should be prescribed a uniform classification applicable to both rail and motor traffic. Mr. Reed also advocated a uniform rate level east of the Mississippi river, with a higher level west thereof.

Mr. Cotterill also argued for uniform rates east of the Mississippi, although he conceded that there might be some justification for a higher basis in northern New England and Florida. He also assailed the present exception ratings as having no basis in classification principles, asserting that they are based on the competition of motor carriers. The present "hodge podge" cannot be worked into anything, Mr. Cotterill said.

The burden of the motor carrier's argument was borne by Mr. Turney who spent much of his time explaining and defending the Edwards cost studies, although he did not go along with Dr. Edwards in all details. Mr. Turney took the position that the commission must determine carrier costs under the 1940 act which he said calls for the promotion of coordination.

Would Force L.c.l. Rates Up—In general his position was that the commission should refuse to let a railroad go below what the Edwards formula calls out-of-pocket costs in meeting a competitive rate. The out-of-pocket costs, as calculated by Dr. Edwards, include elements not ordinarily included by railroads in calculating such costs. Mr. Turney supported his argument with citations of the l.c.l. "deficits" as calculated by Dr. Edwards. He also expressed confidence that the Edwards formula would show motor carriers to be the low cost carrier for l.c.l. generally—that their out-of-pocket costs on that basis would permit them to fix a lower "marginal" rate, than the railroads. Mr. Turney set forth and defended his proposal in considerable detail, proposing also differing carload rate scales depending on minimum weights.

In his earlier argument for the state of Kentucky, Mr. Orr had referred to this "marginal" rate floor proposed by the motor carriers, saying it appeared to be "a high-ceilinged tent for the trucks to go to sleep under at the expense of the rail lines."

Carl E. Newton Clarifies C. & O.'s Position on Rail Financing

Stripped of banking language, the recently-ended struggle between "financial giants" is as elemental as an old fashioned prize fight, according to Carl E. Newton, president of the Chesapeake & Ohio, in an article on the marketing of railroad bonds in the July issue of "Tracks," employee magazine of the C. & O. In Mr. Newton's view, "the mixing of the commercial with the professional activities of investment bankers underlies much of the trouble that produced the fighting." He outlines the commercial functions performed by investment bankers as merchants of rail bonds, and distinguishes them from the professional functions which they perform in advising railroad managements what kind of bonds will be salable. "But here is the rub: In advising a railroad on the salability of bonds, the investment bankers have advised it at what price the railroad ought to sell its bonds. Then, that same investment banker expects to be the buyer of those bonds at that price.

"Ever since Robert R. Young assumed the financial leadership of the C. & O. Lines in 1937," he writes, "the C. & O. has objected to this way of doing business" because "the C. & O. has not believed that a buyer of its bonds could give disinterested advice on price." He states the C. & O.'s view as being that "the railroad should pay the investment banker a fair fee for whatever advice he gives as a professional adviser. But when it comes to selling its bonds, the railroad should shop around and sell them at the best price it can get in the competitive market."

Truckers Can Thank Railroads Says C. N. J. Officer

F. L. Ayres, industrial agent, Central of New Jersey, on June 21, told the Rotary Club of Mauch Chunk, Pa., that numerous truck lines owe their regular operation in this war to the railroads.

Pointing out that his road alone has handled more than 100 million barrels of oil since war was declared, he explained that in normal times but 5 per cent of the east's petroleum supply comes by rail, pipe line or barges, the remaining 95 per cent normally being carried by tankers. Following withdrawal of the latter along the Atlantic Coast, the railroads promptly took over "virtually the entire burden," Mr. Ayres observed, hauling the petroleum products which fueled trucks, as well as other users.

Reed Castigates the B. I. R.

Senator Reed, Republican of Kansas and a member of the Senate committee on interstate commerce, has recently made public a letter which he addressed on June 7 to the three members of the subcommittee appointed by Chairman Wheeler to consider the bill (S.1836) to extend the life of the Board of Investigation and Research four years beyond September 18, 1944. As noted in *Railway Age* of June 17, page 1183, this subcommittee held a public hearing on this proposal on June 9, at which time the only committee member present was Senator Stewart, Democrat of Tennessee, who is both the author of the bill and the chairman of the subcommittee. The other subcommittee members are Senators Hill, Democrat of Alabama, and Shipstead, Republican of Minnesota.

Remarking that "it is difficult to believe that Senator Stewart is serious in the purpose of his bill," Senator Reed pointed out that estimates of the cost of the research assigned to this board by the Transportation Act of 1940 ranged from $100,000 to $250,000. "I think the late Honorable Joseph B. Eastman and myself gave the committee assurance that the research would not exceed the latter sum," he wrote. According to his letter, however, the board "has expended $1,063,927 and has not made, today, a single complete study upon any phase of the investigation it has been conducting."

"Flagrant Abuse of Confidence"—Terming this "a flagrant abuse of the confidence of Congress, and the greatest waste of money that has ever come under my observation," Mr. Reed pointed out that the appropriation of $275,000 which the board received last year was accompanied by "definite and specific instructions to complete the work and close out the board by September 18, 1944," and that its request this year for a further appropriation was "definitely and specifically refused."

"Senator McKellar and I, along with others, wasted no words in expressing our views of the complete and utter failure of this board to have any respect whatever for the expressed instructions of the Congress," the Kansas Senator continued, here referring to remarks such as were made in the course of hearings before a Senate appropriations subcommittee, as reported in *Railway Age* of March 18, page 571.

The letter concluded with the information that its author was asking Chairman Wheeler to give members of the interstate commerce committee "full notice" in the event the question of extending the life of the B. I. R. is to be taken up by that committee, "so that all the facts involved" can be given adequate consideration.

Would Accord Carrier Status to Allied Vans

(*Continued from page 1220*)

status and does not own vehicles, there must be a showing that the vehicles are operated under the applicant's "direction and control and under its responsibility to the general public as well as the shipper." In the Boston & Maine case, as noted in the *Railway Age* of September 5, 1942, page 382, the commission reversed a prior report of Division 5 and granted the Boston & Maine Transportation Company "grandfather" clause certificates covering common-carrier trucking services which on the "grandfather" date were being conducted under contractual arrangement with independent operators.

Control Must Be Real—In doing so the commission broadened the Dixie Ohio rule with its finding that "direction," "control," and "responsibility," are "conclusions dependent upon the facts presented in each individual case"; and the question "cannot be decided by the existence of any single factor such as the name used on the bill of lading or displayed on the vehicle, the method of payment for the service performed, or the terms of the agreement between the parties."

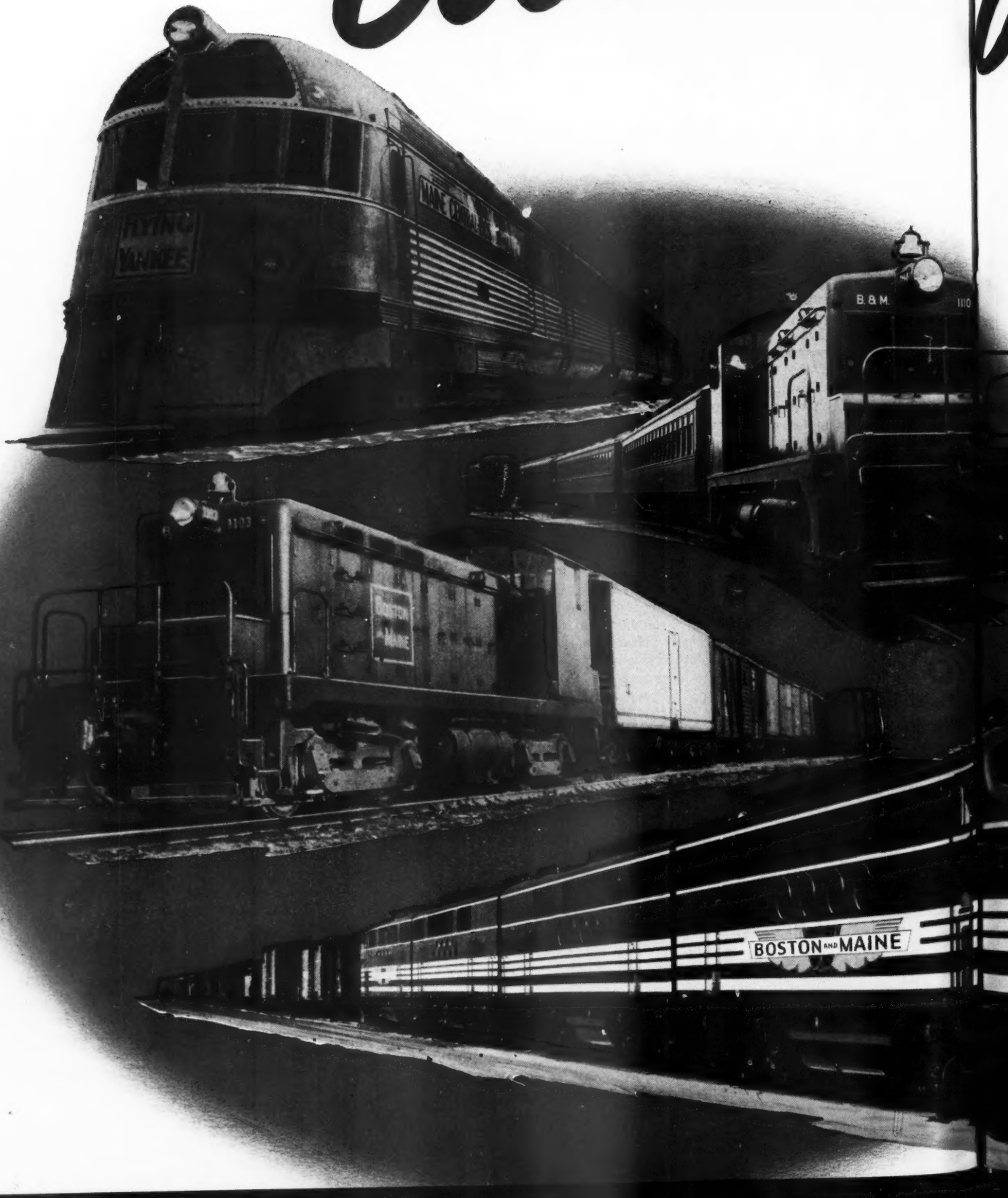
An appendix to the proposed report sets up in parallel columns, the responsibility for vehicles utilized which is exercised by the Dixie Ohio Express Company, Boston & Maine Transportation Company, and Allied. "Examination thereof," the examiner says, "will disclose that as to each indicia of control or responsibility Allied's position [with respect to "C-Service"] is as strong as that" of the other two, "both of which were found to have a carrier status." He added that "in a number of respects its position is definitely stronger than that of the Boston & Maine Transportation Company."

The examiner would build up nationwide rights for Allied by granting its "grandfather" application to cover operations between all points in the country except North

News Department continued on second left-hand page

ALL TYPES OF GM

Allied



M DIESEL POWER
for Victory

THE Boston and Maine has recently strengthened its motive power by the addition of four General Motors 5400 Hp. Diesel Freight Locomotives (with fourteen more to follow) and now joins the fast growing group of railroads using GM Triple Diesel Service — Freight — Passenger — Switcher.

★ *LET'S ALL BACK THE ATTACK — BUY MORE WAR BONDS* ★

ELECTRO-MOTIVE DIVISION
GENERAL MOTORS CORPORATION LA GRANGE, ILLINOIS, U.S.A.

BOSTON AND MAINE

GENERAL MOTORS LOCOMOTIVES

Dakota, Montana, Idaho, Washington, Oregon, California, Nevada, and Utah. He would permit service to those states on the basis of the showing of public convenience and necessity which he finds Allied to have made in supporting accompanying "extension application" filed "as a precautionary measure in the event that the 'grandfather' application should be denied in whole or in part."

Has 354 Agents—Meanwhile, Mr. Croft had found that Allied has no carrier status with respect to shipments transported in its so-called "A-Service," which involves shipments hauled by its affiliates within the scope of their own interstate operating authority. The examiner appreciated that this finding will require either abandonment of that service or changes therein. In that connection he assumes that "once the question of Allied's status has been cleared up such changes as may be necessary to bring both its operations and those of its agents into conformity with the act will be made."

The evidence in the case showed that as of January, 1944, Allied had 272 booking agents and 354 hauling agents located at 365 points in 47 states and the District of Columbia. Nevada was the only state in which none was located. Its 1943 gross revenue of $9,297,743 came from 51,043 shipments, and compares with $1,188,318 gross from 12,460 shipments in the 12 months ended with May 31, 1934.

Rules Issued for Substituting Rail for Truck Service

Through an amendment to General Order ODT 3, Revised, the Office of Defense Transportation has formally authorized substitution of rail transportation for motor common carrier service in designated areas "to alleviate traffic congestion and provide for full utilization of transportation facilities," according to an O. D. T. announcement last week.

The amendment became effective June 19. It introduces a new section (501.10a) of the order, which sets forth the conditions under which rail service may be substituted for that of truckers and the rules and procedure to control such cases. Substituted service is permitted only under an O. D. T. certificate, it was pointed out, and may be employed only between points which the truck operators are authorized to serve and between which they continue to provide over-the-road truck service.

The O. D. T. explained that motor-rail freight diversion does not change the applicable rates or relieve the truckers' responsibility. The trucker is required to pay the railroad its tariff rates for the rail movement. While rules are provided for loading and unloading shipments and the collection and delivery of l. c. l. movements, the section also authorizes two or more truckers to aggregate shipments to form carload lots.

The modified order further provides that a motor carrier may not substitute rail for truck service if the shipper provides otherwise on the bill of lading. Requirements are continued in effect concerning the substitution of truck service by one motor common carrier for any other motor carrier and the registration at O. D. T. field offices of freight offered truckers which they are unable to move within the specified time limits.

As reported in *Railway Age* of May 13, page 906, the Interstate Commerce Commission's Emergency Order M-5 enables truckers to take advantage of O. D. T. certificates authorizing substituted service, and puts much the same limitations on the conditions under which substituted service may be used as are set forth in the amended O. D. T. order.

Jesse Jones Still Favors St. Lawrence Seaway

Secretary of Commerce Jones still favors construction of the proposed St. Lawrence seaway, for he feels that it will "greatly strengthen our national economy." The secretary has so advised Senator Aiken, Republican of Vermont, sponsor of S.1385, a bill to approve the St. Lawrence agreement entered in 1941 by the United States and Canada.

The senator solicited Mr. Jones' view and received a letter which he inserted in the June 15 issue of the Congressional Record. The secretary recalled that he appeared before the House committee on rivers and harbors in 1941, "giving my full support to the project as a national defense undertaking." He is "equally convinced" that it is "an invaluable asset in any program of post-war production and commerce"; and is "sure" that approval of the Aiken bill "at this time is highly desirable so that we shall be ready to move ahead with construction as soon as conditions permit."

The secretary also enclosed a letter he had written in 1941 to Chairman Mansfield of the House committee on rivers and harbors. That letter set forth the Department of Commerce's "conclusion" that the project should be undertaken, adding that "if thought advisable, it could easily be financed through the issuance and sale of revenue bonds payable from toll charges and the sale of power, with no cost to the taxpayers."

Railroads Alive to New Communications

(*Continued from page 1219*)

trains. This experimentation has been going on for some years."

Pointing to his road as an example of how the railroads have employed the principles of radio, Mr. Triem said that when this new form of communication began coming into use, the Pennsylvania pioneered in the introduction of the cab signal. Like other railroads, Mr. Triem stated, the Pennsylvania "has been constantly engaged in research from its very beginning." In each department, division and group, he reported, employees are carrying on research as a part of their regular work. In this connection he mentioned specifically the test department at Altoona, which employs 275 persons and represents an outlay of $1,500,000 a year.

Improvements Are Numerous—As a result of this sort of activity, Mr. Triem brought out, great progress has been made in improving freight and passenger equipment and such parts of the railroad plant as track, rail and signals. Great strides, too, have been made in the development and use of such things as air conditioning, he added. Numerous further advances in locomotive designs, produced by research, are now under consideration by the Pennsylvania, and promise additional efficiency of operation, the witness stated.

Mr. Triem said that up to the beginning of the war and the restrictions on the use of critical materials, the railroads carried on programs of equipment improvement and other betterments "on scales of unprecedented extent."

"In fact," he went on, "during all the discouraging depression years which preceded the war, the railroads—and in this respect my own road, the Pennsylvania, was highly typical—were engaged in the most important and far-reaching betterment programs of their entire history. In consequence, they entered the war with the full advantage of this impetus and on the crest of a great tide of progress which had been sweeping forward for years." The Pennsylvania has upward of $60,000,000 invested in its signalling systems and spends $5,000,000 annually in maintaining them, the subcommittee was informed.

"Sympathetic cooperation of government and railroad management," Mr. Triem concluded, "with relief from subsidized competition, and with sufficient income left over after expenses and taxes to sustain credit, constitute the basic needs for our industry to maintain and accelerate its progress. Give the American railroads these assurances, which are all they ask, and you may rest confident that these railroads, which played so great a part in the building of our civilization, will be found to be one of its strongest pillars in the great future that lies ahead."

"Write-of-Way"—New Pamphlet for C. N. J. Passengers

The first issue of "Write-of-Way" made its appearance during the week of June 12, and 35,000 copies were distributed on trains to Central of New Jersey passengers as a prelude to the new timetable that went into effect June 18.

Informal in text and makeup, splashed with color and cartoons, the paper starts off with an explanation of the improvements in train schedules brought about by responses to questionnaires distributed to commuters on April 17. "Replies were received from 3,859 of you," the message reveals. "We filed the customary half-dozen profane ones in the waste basket, and carefully tabulated all the others to see what we could do. We had individual meetings, timetable meetings and all kinds of meetings to see what we could work out. Then we got up new timetables." The C.N.J. has added a new weekday train for better service to dinner-hour commuters from New York to main-line points—Elizabeth, Roselle, Cranford, Westfield, Plainfield, etc., in addition to two weekday summer trains and 21 week-end summer trains to or from New Jersey shore area as part of the regular expanded summer service.

One feature of the new sheet, entitled "Standees' Department" comments on recent newspaper stories intimating that Southern Pacific passengers "were enjoying

seats at the expense of Jersey Central riders." It is explained that even with the 14 coaches leased from the C.N.J., President A. T. Mercier of the S.P., has reported "his line has more than 2,000 standees each weekday because of troop movements and other war demands."

Other items remark upon lighting, shore travel, smoking, etc. "Gentlemen and ladies, too," are reminded that "if anybody must stand regularly, we'd like to know about it."

A series of thumb-nail "shorts" lets the C.N.J. traveler "in" on some of the railroad's operating statistics.

Ton-Miles in May Surpassed 1943 Figure by 4.5 Per Cent

The volume of freight traffic, measured in ton-miles of revenue freight, handled by Class I railroads in May exceeded the same month last year by four and one-half per cent, according to the Association of American Railroads. It amounted to approximately 65,000,000,000 ton-miles, according to preliminary estimates. Class I roads in the first five months of 1944 performed approximately 5 per cent more revenue ton-miles of service than in the same period of 1943, 30 per cent more than in the same period of 1942, and 157 per cent more than in the first five months of 1939.

	1944	1943	Per cent increase
First 3 months	182,465,526,000	170,783,841,000	6.8
April	[1]60,100,000,000	59,052,370,000	1.8
May	[2]65,000,000,000	62,146,617,000	4.6
5 months' total	307,565,526,000	291,982,828,000	5.3

[1] Revised estimate.
[2] Preliminary estimate.

The above table summarizes ton-mile statistics for the first five months of 1944 and 1943.

I. C. C. Majority Upholds Use of C. F. A. Routing Guide

The Interstate Commerce Commission, on reconsideration of its I. & S. No. 5120 proceedings by the full commission, has affirmed the findings of Division 3 upholding certain routing limitations imposed by the routing guide published by Central Freight Association railroads. The division's report was reviewed in *Railway Age* of August 28, 1943, page 356. The effective date of the order vacating the suspension of the challenged tariff schedules, which was postponed by order of the commission, pending its further consideration, has been fixed as of July 3.

Routes Limited—The schedules under investigation proposed, by reference to the routing guide, to specify certain routes in C.F.A. territory in connection with joint through commodity rates on lumber and lumber articles, in carloads, from the South and Southwest, and on citrus fruits, vegetables and strawberries, in carloads, from Florida, and these were found just and reasonable by the division. The commission's majority found "nothing improper" in Division 3's view with respect to not including unspecified routes, "unknown and indefinite in number and extent," in the routing guide, and pointed out that interests objecting to its limitations "prefer not to have any routing restrictions placed against the rates on their traffic, and this would seem to be so regardless of whether or not the routes are unduly circuitous, uneconomical, and wasteful of transportation service."

To objections based on the alleged difficulty of using the routing guide, the majority said, "any claim of complexity would seem to arise, not out of the guide but, out of the fact that heretofore the rates were considered as applying over any and all routes, and whenever a shipper wished to reconsign a car he did not need to be concerned as to whether or not it could be sent to a particular destination or over a particular route at the joint rate even where circuitous routes and indirect hauls would be required. . . . But that difficulty will not result from any infirmity in the guide but from the fact that there is a tariff defining the routes over which the rates apply."

Four Dissenters—In appealing for a postponement of the effective date of the schedules until after the end of the war, objectors had referred to the difficulty of using the routing guide under the existing manpower shortage. To this the commission majority remarked: "We are not convinced that petitioners' gloomy picture of the situation is warranted by the record. We believe their fears are exaggerated. . . . Moreover, our approval of the schedules . . . will be without prejudice to the filing of a formal complaint . . . where a shipper has reason to believe that an unlawful rate results from the omission of a particular route in the guide."

Commissioner Mahaffie's dissent from the majority view was noted, while Commissioners Splawn and Rogers joined in the dissenting expression of Commission Alldredge, who took the position that "because of the lack of uniform treatment in connection with the use of the proposed routing guide a case of undue prejudice to southern and southwestern shippers and undue preference of transcontinental shippers of the commodities described has been established."

Georgia Goes to Supreme Court on Rate "Equalization"

A motion for leave to file a bill of complaint of the State of Georgia vs. twenty railroads, asking damages on account of alleged extortionate and unlawful freight charges exacted from the state and shippers in the state during the past ten years was filed June 20 with the Supreme Court of the United States. The court will act upon the motion after it reconvenes in the fall, following its summer recess, and a decision to receive the complaint normally would lead to regular court procedure involving argument and a formal opinion.

The state was acting under a constitutional provision permitting a sovereign state to bring an original suit directly in the Supreme Court without first having recourse to the inferior courts. The complaint would call for a permanent injunction against the collection of the allegedly discriminatory and prejudicial freight rates and for triple damages in the total amount of $60,750,000, this amount being based on claims of $250,000 excess charges paid altogether by the state and $2,000,000 annually by shippers in the state during the last ten years.

The railroads against which the complaint would be directed are the Pennsylvania; Baltimore & Ohio; Chicago & Eastern Illinois; Chicago, Indianapolis & Louisville; Chesapeake & Ohio; Erie; New York Central; New York, Chicago & St. Louis; Norfolk & Western; Richmond, Fredericksburg & Potomac; Wabash; Western Maryland; Atlantic Coast Line; Clinchfield; Louisville & Nashville; Illinois Central; Gulf, Mobile & Ohio; Nashville, Chattanooga & St. Louis; Seaboard Air Line; and Southern.

As noted in *Railway Age* of June 3, page 1090, the governor of Georgia had directed the state attorney general to file such a suit with the motive of attaining "equalization" of freight rates in the South with those in Official Territory and of removing the so-called trade barriers against the South which the existing rate structure allegedly creates. The motion was filed, of course, while the Interstate Commerce Commission's general class rate investigation was being argued by supporters and opponents of this same rate philosophy, as reported elsewhere in this issue.

May Operating Revenues Exceed '43 Month by 5.3 Per Cent

From preliminary reports of Class I railroads representing 80.9 percent of total operating revenues, the Association of American Railroads has estimated that operating revenues in May totaled $646,419,530, compared with $614,134,233 in May, 1943, an increase of 5.3 per cent. Estimated May freight revenues were $484,043,574, compared with $463,767,516, an increase of 4.4 per cent. Estimated passenger revenues were $120,006,946, as compared with $108,777,393, an increase of 10.3 per cent.

Arnot Leaves O. D. T. Staff

It has become known that the resignation of Harold C. Arnot as director of the Property Operations Division of the newly-instituted Highway Transport Department of the Office of Defense Transportation will become effective July 1. Until the absorption of the Division of Motor Transport into the new department on June 1, Mr. Arnot was director of that division, having succeeded Inter-State Commerce Commissioner John L. Rogers in that post a year ago.

In explanation of Mr. Arnot's resignation it has been suggested that he has not been sympathetic with the policy change underlying the consolidation of the O. D. T. units dealing with local transport and bus and truck operations into a single department under the direction of Guy A. Richardson, assistant director of the O. D. T., and the view has been attributed to him that the functions and responsibilities of the

former Motor Transport Division, which absorbed a large portion of the budget and manpower of the whole O. D. T. organization, should not have been subordinated to or merged into those of another, smaller unit.

Report Swiss to Spend Nearly Half-Billion for Transport

In order to provide employment, Swiss authorities, it is reported from Zurich, have agreed upon a program to be spread over 10 years, allocating $1,401,000,000 (Sfr. 6,000,000,000) for building activities, $467,000,000 of this sum is destined for general improvement of transport facilities, including railways and highways. The Swiss Federal Railways are to receive $177,460,000 (Sfr. 760,000,000), with $70,050,000 (300 million francs) to be used for replacement of rolling stock, and $58,375,000 (250 million francs) for the double-tracking sections of single-track. $11,675,000 (50 million francs) is to be set aside for extension of electrification. Immediate plans call for an expenditure of $53,705,000 (230 million francs) for speedy electrification of several sections of railway.

Fourth Radio "Get-Together" for N. & W. Employees

The fourth in a series of wartime meetings, which are supplanting "for the duration" the system-wide Better Service conferences of the Norfolk & Western, occurred June 22, when 23,000 N. & W. employees "got together" via 19 radio stations in six states. In a 30-min. broadcast, emphasizing the vital importance of coal to the war effort, there was described the transportation of bituminous coal from the Southern Appalachian region to the N. & W.'s tidewater terminal at Lambert Point, Norfolk, Va.

There were on-the-job interviews with a "mine run" conductor in charge of a coal train moving empty coal cars to the mines and returning with loads to the division terminal; a division car distributor who supervises daily delivery of a sufficient number of proper types of empties to the mines for loading; a superintendent of terminals, and a weighmaster, who handle regrouping and weighing of coal trains at the Roanoke Terminal, and an assistant superintendent of terminals at Norfolk, who explained the operation of coal pier 5 at Lambert Point. There was a realistic portrayal of coal being loaded aboard ships.

F. K. Prosser, coal traffic manager, spoke of the operations of his department, and, in conclusion, President W. J. Jenks pointed out that the N. & W. hauls nearly one-tenth of all bituminous coal mined in the United States.

THE SOUTH MANCHURIA RAILWAY has been so affected by mobilization that it has increased to 53 per cent the proportion of women employees on its staff from the previous maximum of about 10 per cent. The Railway Gazette, London, reports that clerical positions on the S. M. R. are being occupied by women to an increasing extent, and training courses have been arranged.

Construction

BANGOR & AROOSTOOK.—This railroad has awarded a contract for the construction of part of a coaling plant at Millinocket, Me., at estimated cost of $35,750, to the Ross & White Co. of Chicago.

GREAT NORTHERN.—This road has started construction of a 5,386-ft. spur track near Kettle Falls, Wash., with an extension by trestle into the Columbia River to facilitate the unloading of barges. This work is being undertaken as part of a plan to link up water transportation on the 151-mile reservoir behind Grand Coulee dam with transportation by rail of rough-cut lumber which will be delivered by the Great Northern from Kettle Falls to Spokane, Wash., for milling and finishing in transit.

NEW YORK, NEW HAVEN & HARTFORD.—This railroad has awarded contracts for an addition to its wheel shop and an extension of the monorail structure at Readville, Mass., at estimated cost of $40,000, to the Tredennick-Billings Company of Boston, Mass., and for the construction of bunk and locker facilities at Worcester, Mass., at estimated cost of $22,000, to the J. W. Bishop Company of Worcester, Mass.

ST. LOUIS-SAN FRANCISCO.—This road has placed an order with the Union Switch & Signal Co., for signal materials involved in the installation of automatic block signaling between Henryetta, Okla., and Wetumka, a distance of 22 miles. The order includes H-2 searchlight signals, Style DN-11 relays, and RT-21 copper oxide rectifiers, with U-5 switch circuit controllers, etc. The installation work will be handled by company forces.

SEABOARD.—This company has authorized a revision of grade from Citra to Oak, Fla., at estimated cost of $20,000; the construction of packing house facilities at Zellwood, Fla., at estimated cost of $57,000; and laying of tracks at Skelton, Va., at estimated cost of $24,500, at Raleigh, N. C., at estimated cost of $31,000 and near McKenney, Va., at estimated cost of $30,400.

SOUTHERN.—This company has authorized the construction of a Diesel-electric locomotive repair shop at Alexandria, Va., at estimated cost of $297,766, and the renewal of three steel truss spans on the Rappahannock river bridge at Remington, Va., at estimated cost of $94,200. The railroad also plans to construct interchange tracks on the Cincinnati, New Orleans & Texas Pacific at Lansing, Tenn., at estimated cost of $46,225, and a 3.2-mile raise in grade on the New Orleans & Northeastern between Savoy and Basic, Miss., at estimated cost of $31,000. Work on these latter projects will be carried out by the company's own forces.

SOUTHERN PACIFIC.—This road has applied to the Interstate Commerce Commission for authority to construct a line from Yuba City, Calif., to Berg, 2.9 miles.

Supply Trade

D. L. Townsend has been appointed manager, western sales of the **Symington-Gould Corporation** with headquarters in Chicago.

D. L. Golden has been appointed director of personnel of the **Pullman-Standard Car Manufacturing Company,** with headquarters at Chicago.

C. A. Odell, vice-president of the **Superheater Company, Ltd.,** of Montreal, Canada, has been elected president to succeed **F. A. Schaff,** who becomes chairman of the board. Mr. Odell was formerly associated with the Canadian Pacific. He joined the Superheater Company, Ltd., in 1919 as assistant to the vice-president and subsequently served as assistant secretary and assistant treasurer, manager and general manager. He was elected vice-president in 1926. Mr. Schaff was senior vice-president of the company from July, 1920 to July, 1940 in which latter month he was elected president. He is also president of the asso-

C. A. Odell

F. A. Schaff

News Department continued on next left-hand page

A Smooth Ride is Based on "HSC" Brake Control

High Speed Service

Aggressive railroad leadership focuses on postwar ultra high speed operation with passenger comfort and safety as travel inducements.

Basically these factors are associated with the controls and the "HSC" Brake Control is designed as the bedrock on which an atmosphere of comfortable safety can be built.

To that end the powerful braking forces required for stops from high speeds are at the instant command of the engineman; but are continuously supervised to prevent over-braking at low speeds:

ELECTRO-PNEUMATIC TRANSMISSION
Saves Valuable Seconds by Instantaneous Brake Action on all Cars

SPEED GOVERNOR CONTROL
Eliminates Surge — Supervises Braking Pressures to Insure Uniform Retardation at all Speeds

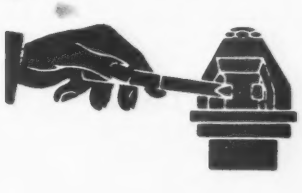
"DECELOSTAT" Wheel Protection
Watchman of the Rails — Recognizes Oily, Frosty or Wet Rails and Reduces Braking Pressure if Wheel Slippage Impends

Conventional Service

Where ultra high speeds are not contemplated "HSC" Control is supplied as a conventional pneumatic brake, having the maximum possible operating reliability afforded by modern design.

With an eye to the future its components are so arranged that the equipment can be adapted to ultra high speed service merely by addition of electric elements and substitution of parts.

Thus, future requirements can be anticipated in new cars of standard design by including the foundation brake gear and electric cable wires for high speed service. No car design alterations will be required when the decision to enter high speed service materializes. This procedure is invaluable as it permits investment in modern equipment without risk of rapid obsolescence.



WESTINGHOUSE AIR BRAKE CO.

WILMERDING, PENNSYLVANIA

ciate company, the Superheater Company of New York. **H. E. Brown,** who has been general manager since March, 1934 and assistant to Mr. Odell, has been elected vice-president in charge of operatiohs. Mr.

H. E. Brown

Brown was formerly associated with the Canadian National. He joined the Superheater Company in June, 1926. **G. S. Thomson,** who joined the company in May,

G. S. Thomson

1916 and has been manager of the Sherbrooke, Quebec works for the past 24 years, has been elected vice-president of the company.

Austin C. Ruse has been placed in charge of railway sales in the Chicago, Omaha and Denver areas for the **Morton Manufacturing Company.** Mr. Ruse will maintain headquarters in Chicago.

C. E. Kinnaw has been appointed special representative of the **Hennessy Lubricator Company.** Mr. Kinnaw was formerly sales engineer with the Sunbeam Electric Manufacturing Company and more recently with the transportation equipment division of the War Production Board.

W. C. Rockenstire has been appointed general superintendent and **J. J. Smith,** assistant manager, of the Schenectady, N. Y. plant of the **American Locomotive Company.** Mr. Smith was incorrectly reported as having been appointed general superintendent in the *Railway Age* of June 10.

C. L. Olsen, district service engineer of the **Electro-Motive division** of the **General Motors Corporation,** with headquarters at Miami, Fla., has been promoted to manager of the Eastern region, with headquarters at New York. **Thorwald O. Robertson,** district service engineer of the Western region, with headquarters at Los Angeles, Cal., has been advanced to manager of the Western region, with the same headquarters.

Ed. R. Galvin has resigned as general sales manager of **R. G. LeTourneau, Inc.,** Peoria, Ill., to become president and a director of the **Tyson Bearing Corporation,** Massillon, Ohio. Mr. Galvin was appointed a district representative of the Caterpillar Tractor Company, Peoria, in 1927, and later served that organization as eastern sales manager and as general sales manager. In November, 1938, he resigned to become general sales manager of LeTourneau, the position he held at the time of his resignation.

OBITUARY

Arthur P. Hagar, sales representative, northeastern district for the Safety Car Heating & Lighting Co., died June 8.

Oliver Wade Spencer, vice-president of the southern wheel division of the American Brake Shoe Company, died June 18. He was 52 years old. Mr. Spencer was graduated from Yale University in 1917 and began his career as a salesman in South America for the Standard Oil Company. He joined the American Brake Shoe Company in 1922 as an apprentice at the Mahwah, N. J., plant. He was appointed sales representative for the brake shoe and castings and the southern wheel divisions in St. Louis, Mo., in 1924 and elected vice-president of the wheel division in 1939. He was transferred to the New York office in 1942.

Equipment and Supplies

FREIGHT CARS

ST. LOUIS SOUTHWESTERN is inquiring for 100 40-ft. general service cars of 50 tons' capacity.

NEW YORK CENTRAL has placed orders for 1,000 55-ton hopper cars with the Pressed Steel Car Company at Pittsburgh, Pa., and 1,000 50-ft. 55-ton box cars with the American Car & Foundry Co. at St. Louis, Mo. These cars were originally ordered from the railroad's subsidiary, Dispatch Shops, Inc., in March, as reported in the *Railway Age* of March 25. The orders were transferred to the contract car-builders in order to expedite delivery of the equipment.

IRON AND STEEL

The NORFOLK & SOUTHERN has ordered 854 gross tons of 100-lb. rail from the Bethlehem Steel Company.

Financial

BALTIMORE & OHIO.—*Promissory Notes.*—This road has filed with the Interstate Commerce Commission its application for authority to issue $1,200,000 of promissory notes, series D, the sale of which was reported in *Railway Age* of June 17, page 1191.

BALTIMORE & OHIO.—*Promissory Notes.*—Division 4 of the Interstate Commerce Commission has authorized this road to issue $605,250 of promissory notes, series C, in further evidence of, but not in payment for, the unpaid portion of the purchase price of four 1,000-hp. Diesel-electric switching locomotives and six 660-hp. Diesel-electric switching locomotives ordered from the American Locomotive Co. The notes have been sold at par to the Central National Bank of Cleveland, Ohio, with a 1⅞ per cent interest rate.

BANGOR & AROOSTOOK. — *Promissory Notes.*—This road has applied to the Interstate Commerce Commission for authority to issue promissory notes in the amount of $360,000 in connection with the financing of the purchase of two locomotives from the American Locomotive Company, 50 box cars of 40 tons capacity from the Magor Car Corporation, and 35 hopper cars of 50 tons capacity from the American Car & Foundry Company. The applicant proposes to solicit competitive bids for the notes.

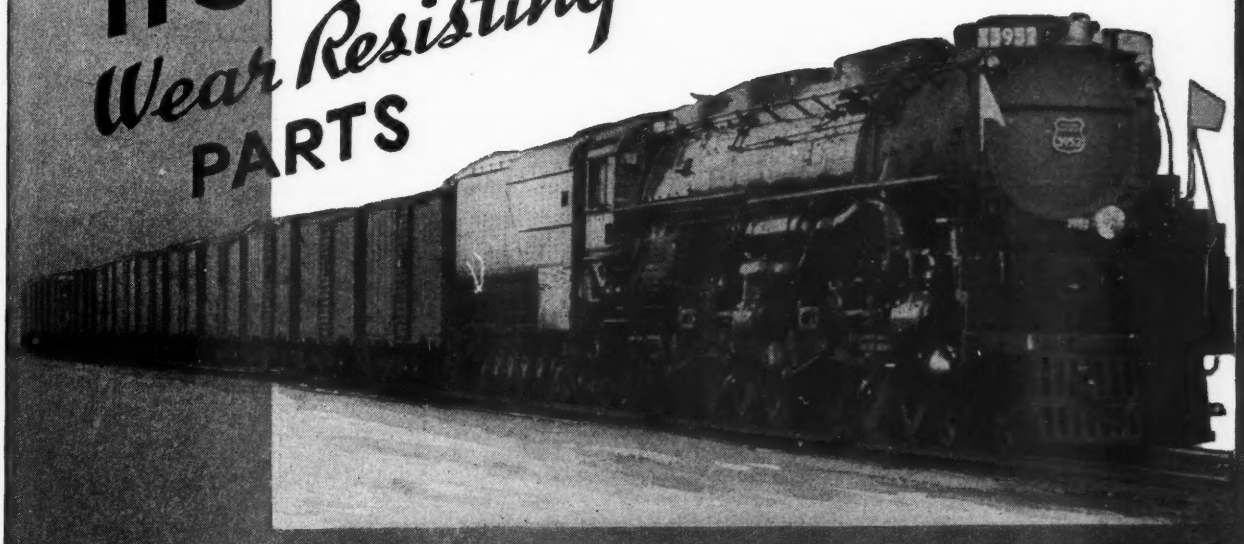
CHESAPEAKE & OHIO-WHEELING & LAKE ERIE.—*Acquisition of Stock.*—The Chesapeake & Ohio has applied to the Interstate Commerce Commission for authority to acquire an additional unspecified amount of the stock of the Wheeling & Lake Erie, of which it already holds control, without further action by the commission.

CHICAGO & ILLINOIS MIDLAND.—*Stock.*—Division 4 of the Interstate Commerce Commission has authorized this road to issue $1,000,000 of redeemable capital stock of $100 a share par value, to be delivered to the Commonwealth Edison Company, owner of its outstanding stock, at par in connection with the retirement of $1,200,000 of 2¼ per cent serial notes held by 5 Chicago banks. The funds required, in addition to the amount advanced for the stock, will be supplied from the road's treasury. The transaction will result in a reduction of the road's funded debt and interest charges.

CHICAGO, INDIANAPOLIS & LOUISVILLE.—*Attorney Fees Approved.*—Federal Judge Michael L. Igoe at Chicago last week approved as reasonable, fees and expenses of $272,425 for attorneys involved in the reorganization of the Chicago, Indianapolis & Louisville. Thirteen claims were involved, the largest of which was that of the legal firm of Willkie, Owen, Otis, Farr & Gallagher, New York, which received $75,000. Judge Igoe has the reorganization plan under advisement.

CHICAGO, INDIANAPOLIS & LOUISVILLE.—*Reorganization Expenses.* — Division 4 of the Interstate Commerce Commission has

HSGI
Wear Resisting PARTS



INSURE EXTRA SERVICE

TODAY'S heavy wartime transportation schedules demand super locomotive performance.

Vital factors which help to insure against the loss of power, fuel and excessive roundhouse repairs are Hunt-Spiller *Air Furnace* Gun Iron wear-resisting parts in the valves and cylinders.

HSGI Bushings, Bull Rings and Packing Rings resist frictional Wear and high temperatures . . . insure pressure-tight operation for maximum periods between renewals.

More and more railroads are applying HSGI wear-resisting parts in the valves and cylinders to insure that extra service which is necessary for victory transportation.

HSGI
Reg. U.S. Trade Mark
Cylinder Bushings
Cylinder Packing Rings
Pistons or Piston Bull Rings
Valve Bushings
Valve Packing Rings
Valve Bull Rings
Crosshead Shoes
Hub Liners
Shoes and Wedges
Floating Rod Bushings
Finished Parts
Dunbar Sectional Type Packing
Duplex Sectional Type Packing
for Cylinders and Valves
(Duplex Springs for Above
Sectional Packing)
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approved maximum amounts of allowances for compensation and expenses in connection with this road's reorganization from its inception to February 15, 1944. The total amount of the claims filed was $409,350, of which the division approved $272,427. Among the larger claims were those of Cope J. Hanley, counsel for the debtor company, for $25,000, on which the division approved $15,000; the refunding mortgage committee for $36,994, allowed in full; Willkie, Owen, Otis, Farr & Gallagher, counsel for the refunding mortgage committee, for $112,500, on which $75,000 was allowed; Hunt, Hill & Betts, counsel for the first and general mortgage committee, for $46,456, of which $28,336 was approved; Holthusen & Pinkham, counsel for the Indianapolis & Louisville committee, for $23,465, of which the division approved $12,965; Guaranty Trust Co., trustee, for $25,327, of which $15,327 was allowed; and Davis, Polk, Wardwell, Sunderland & Kiendl, counsel for trustee, for $31,663, of which $17,663 was approved.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—*Court to Rule on Recap Plan Soon.*—Federal Judge Michael L. Igoe at Chicago last week heard arguments on, and took under advisement an amended plan of reorganization for the Chicago, Milwaukee, St. Paul & Pacific, and indicated he would render a ruling on June 30.

CHICAGO & NORTH WESTERN.—*New Securities.*—Delivery of new securities of the reorganized Chicago & North Western will be made about July 11 by the exchange agents, The Bankers Trust Company, New York, and the First National Bank of Chicago, according to a notice mailed last week by the reorganization managers to security holders.

DELAWARE & HUDSON. — *Merger.* — This road, its parent corporation, the Delaware & Hudson Company, and its lessor, the Rensselaer & Saratoga, have filed with the Interstate Commerce Commission applications for authority to consummate and finance the merger of the R. & S. into the D. & H. The applications seek approval of the merger and of the necessary modifications of the D. & H. lease of the R. & S. and of the latter's leases and sub-leases to the D. & H. of the Saratoga & Schenectady, the Albany & Vermont, and the Rutland & Whitehall. The merger contemplates the purchase by the D. & H. of $8,729,200 of R. & S. general mortgage bonds which would be exchanged for R. & S. stock; hence the R. & S. application to issue such bonds, the D. & H. application for authority to assume liability and deliver the bonds in exchange for R. & S. stock, and the Delaware & Hudson Company's application for authority to assume liability as guarantor with respect to interest and sinking fund payments. Also sought by the D. & H. is authority to issue two-year notes in the amount of $8,729,200 to finance its acquisition of the R. & S. bonds; to sell certain of the acquired bonds for cash in settlement with stockholders who may not desire to enter the exchange arrangements; and to assume liability for $1,852,000 of R. & S. first mortgage 4 per cent bonds due April 1, 1961. Liability as guarantor with respect to interest and sinking fund payments on the latter would also be assumed by the D. & H. Company.

GREAT NORTHERN-NORTHERN PACIFIC.—*Trackage Rights.*—The Great Northern has applied to the Interstate Commerce Commission for authority to operate under a trackage rights agreement over a 2.13-mile line of the Northern Pacific giving access to the union passenger station and certain industrial tracks at Duluth, Minn., in order that the existing G. N. line approaching this station may be abandoned.

GULF, MOBILE & OHIO.—*Plan to Issue New Trust Bonds.*—Directors of the Gulf, Mobile & Ohio, at a meeting held in St. Louis, Mo., on June 15, considered plans to issue $8,500,000 in 25-year collateral trust bonds which will be offered later to underwriters through competitive bidding, and the proceeds of which will be used to pay off $8,600,000 in 4 per cent Series B collateral trust bonds due in 1958 and at present held by the Reconstruction Finance Corporation. At the same meeting the directors declared a dividend of $2.50 per share on the $5 preferred stock, payable on July 10 to holders of record June 27.

SEABOARD AIR LINE.—*Plans Equipment Issue.*—It is reported that the Seaboard Air Line will receive bids July 11 on $2,760,000 of equipment trust certificates with alternative maturities of twenty or thirty equal semi-annual installments.

ST. LOUIS SOUTHWESTERN.—*Petition Filed.*—This road has filed a petition in the United States district court at St. Louis, Mo., requesting permission to pay deferred and current interest accruals totaling $3,906,175, on three bond issues.

WHEELING & LAKE ERIE.—*Equipment Trust Certificates.*—This road has applied to the Interstate Commerce Commission for authority to assume liability for $1,140,000 of equipment trust certificates, Series J, to be dated August 1 and to mature in semi-annual installments from February 1, 1945, to August 1, 1954. The issue would be sold on the basis of competitive bids with the dividend rate determined by such bids; and the proceeds would finance in part the acquisition of 500 steel-sheathed box cars of 50 tons capacity to be purchased at a total cost of $1,520,000.

Average Prices Stocks and Bonds

	June 20	Last week	Last year
Average price of 20 representative railway stocks..	41.67	40.58	36.35
Average price of 20 representative railway bonds..	88.70	88.50	77.90

Dividends Declared

Canada Southern.—$1.50, semi-annually, payable August 1 to holders of record June 24.

Canadian Pacific.—4% non-cum. preferred, 2%, semi-annually, payable August 1 to holders of record June 30.

Cayuga & Susquehanna.—75¢, payable July 3 to holders of record June 20.

Connecticut & Passumpsic Rivers.—6% preferred, $3, semi-annually, payable August 1 to holders of record July 1.

Gulf, Mobile & Ohio.—$5 preferred, $2.50, payable July 10 to holders of record June 27.

Hawaii Consolidated.—7% preferred accum., 15¢, payable June 15 to holders of record June 5.

Mahoning Coal.—5% preferred, $1.25, semi-annually; common, $6.25, both payable July 1 to holders of record June 24.

Massawippi Valley.—$3, semi-annually, payable August 1 to holders of record July 1.

New London Northern.—$1.75, quarterly, payable July 1 to holders of record June 15.

Pittsfield & North Adams.—$2.50, semi-annually, payable July 1 to holders of record June 30.

Providence & Worcester.—$2.50, payable July 1 to holders of record June 14.

Richmond, Fredericksburg & Potomac.—$3, payable June 30 to holders of record June 22.

Savannah & Atlanta.—Preferred, $1.25, quarterly, payable July 1 to holders of record June 14.

Wheeling & Lake Erie.—75¢, payable July 1 to holders of record June 26.

Abandonments

Division 4 of the commission has authorized this company to abandon a branch from Eoline, Ala., to T. C. T. Junction, 11.83 miles, and to abandon operation over certain connecting terminal tracks at Blocton, reserving jurisdiction for 2 years for the protection of any employees adversely affected.

ATLANTIC COAST LINE.—This road and its subsidiary, the Fort Myers Southern, have applied to the Interstate Commerce Commission for authority to abandon operation of and to abandon, respectively, a line from Naples, Fla., to Collier City, 16 miles. In the event this application is approved, authority to abandon an additional 6.85 miles north of Naples is being sought, this to become effective with the construction of an alternate 7-mile line to enter Naples over the abandoned right of way of the Naples, Seaboard & Gulf.

BALTIMORE & OHIO.—This road has applied to the Interstate Commerce Commission for authority to abandon operation of its lessor, the St. Clairsville & Northern, authority for the abandonment of which is sought in another application filed by the village of St. Clairsville, Ohio, and the trustees of the road. The application states that the 3.42-mile line between Barton, Ohio, and St. Clairsville was seriously damaged by a flash flood on July 27, 1943; and the cost of rebuilding is not believed warranted in view of the adequate transportation service, rail and highway, otherwise available to St. Clairsville.

NASHVILLE, CHATTANOOGA & ST. LOUIS.—In a proposed report, Examiner R. Romero has recommended that the Interstate Commerce Commission authorize this road to abandon a line from Union City, Tenn., to Hickman, Ky., 16.57 miles. The proposal was opposed by the regulatory commissions of the two states and by the local governments of the area concerned and representatives of the employees, on the ground that abandonment would result in depreciation of land values, loss of business, and reduction in wages of rail employees. While the examiner found there was some ground for these contentions, he concluded that their effect would be outweighed by the undue burden on the road that would result from continued operation of the line at a loss. The usual reservation of jurisdiction for the benefit of employees who may be adversely affected was recommended.

SOUTHERN PACIFIC.—This road has applied to the Interstate Commerce Commission for authority to abandon a line from Grace, Calif., to Wilson, 12.3 miles.

News Department continued on next left-hand page

We asked 5 foolish women why they don't check ceiling prices

"The storekeeper might get mad"

You're wrong there, lady. Good merchants appreciate customers who keep an eye on ceiling prices, who don't ask them to buy on the black market, who never ask for rationed goods without points, who share and play square with scarce goods.

..."It's too much trouble"

It isn't a lot of trouble to do the little the Government asks—just remember to ask every time you make a purchase, "Is this the ceiling price?" And it's well worth the trouble—if it holds prices down, lessens the danger of inflation.

"We can afford to pay more"

Maybe *you* can, but how about the millions of soldiers' families who must live on Army allotments? Every time you pay black market prices or buy rationed goods without points, you're helping to send prices up—that's the way inflation comes. And *nobody* can afford inflation.

"My store doesn't display ceiling prices"

All retailers will if you keep asking them, "Is this the ceiling price?" It's the law. Ceiling prices must be displayed wherever goods under ceilings are sold. That's the system which has helped to keep prices so much lower in this war than they were in the last.

"I just don't want to do it"

No—and our boys don't want to fight! But they're doing it—magnificently! It's up to you on the home front to do your part to head off rising prices and inflation, help prevent producing a depression for our boys to come home to. Don't be a SABOTEUR on the home front!

Check and be proud! You should be proud if you're the kind of loyal, patriotic American citizen who never pays more than ceiling prices, who pays her ration points in full, who shares and plays square with scarce goods!

It is because of you and millions of women like you—cooperating with American merchants—that the cost of living has gone up only 7 per cent since your Government's price control started.

But the end is not yet. So keep up the good work. Ask *every time*—"Is this the ceiling price?" Never buy a single thing that you can do without. Save your money—in the bank, in life insurance, in War Bonds. When you use things up, wear 'em out, make 'em do, or do without . . . you're helping to HOLD DOWN PRICES!

YOUR STORE WILL BE GLAD TO HAVE YOU ASK:

"Is this the ceiling price?"

HELP US KEEP PRICES DOWN

A United States War Message prepared by the War Advertising Council; approved by the Office of War Information; and contributed by this magazine in cooperation with the Magazine Publishers of America.

Railway Officers

EXECUTIVE

Leslie E. Ross, vice-president of the Niagara Junction has been elected president, with headquarters as before at Niagara Falls, N. Y., succeeding **Rob Roy Macleod,** who has been appointed executive vice-president of all the Niagara Hudson Companies.

FINANCIAL, LEGAL AND ACCOUNTING

Fred H. Munster, assistant auditor of freight accounts of the Texas lines of the St. Louis Southwestern, with headquarters at Tyler, Tex., has been promoted to auditor of freight accounts, succeeding **J. H. Barron,** deceased. **J. R. Long** has been appointed assistant auditor of freight accounts at Tyler replacing Mr. Munster.

OPERATING

F. A. Cooke, superintendent, dining cars, of the Atlantic Coast Line, has been appointed general superintendent, dining cars, with headquarters as before at Washington, D. C.

J. T. O'Dea, assistant to the president of the Peoria & Pekin Union, with headquarters at Peoria, Ill., has been promoted to general manager, with the same headquarters.

D. J. Strahan, assistant superintendent, sleeping and dining car service, of the Canadian National at Halifax, N. S., has been transferred to Moncton, N. B., and **B. B. Archibald,** sleeping and dining car agent at Halifax has been promoted to succeed him as assistant superintendent, at Halifax.

W. A. George, master mechanic of the Jacksonville Terminal Company, has been appointed assistant general manager, with jurisdiction over all of the operating and mechanical departments, with headquarters as before at Jacksonville, Fla. The office of master mechanic has been abolished.

A. W. Osborne, assistant terminal trainmaster of the Chesapeake & Ohio, has been appointed superintendent, Russell division, with headquarters as before at Russell, Ky., succeeding **W. S. Butler,** whose death on June 5 was reported in the *Railway Age* of June 10.

F. A. Pouliot has been appointed general manager of the Quebec Central, with headquarters at Sherbrooke, Que., effective July 1, succeeding **G. D. Wadsworth,** who will retire under the pension rules of that company at the end of June after more than forty-four years of service.

O. R. Teague, on the staff of the general manager of the Seaboard Air Line at Norfolk, Va., has retired from active duty. Mr. Teague, a native of Greensboro, N. C., entered railroad service in 1891, going with the Seaboard Air Line as a train dispatcher in 1899, and thereafter remaining in the employ of that road for forty-five years. During those succeeding years he advanced through the positions of chief dispatcher, trainmaster, assistant superintendent, and superintendent, serving at various times in that latter capacity at Savannah, Ga.; Tampa, Fla.; Raleigh, N. C., and Charleston, S. C. Mr. Teague has also served for numerous terms as adviser and specialist on the Seaboard Air Line's general staff. His membership in the American Association of Railroad Superintendents is among those of the longest standing in that organization.

Robert H. Spicer, whose promotion to superintendent of the Western division of the Chicago, Rock Island & Pacific, with headquarters at Fairbury, Neb., was reported in the *Railway Age* of June 10, was born at Kansas City, Kan., and entered railway service in 1916 as a callboy of the Ft. Worth & Denver City at Ft. Worth, Tex. He held several minor positions at Ft. Worth until 1922 when he was promoted to yardmaster, with the same headquarters. In

Robert H. Spicer

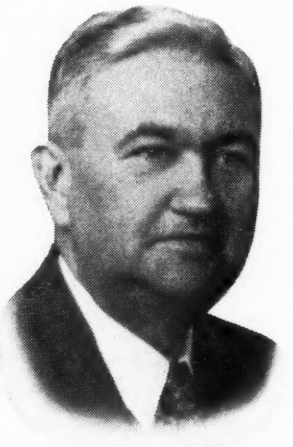
1926, Mr. Spicer was advanced to general yardmaster, with headquarters at Amarillo, Tex., and in 1935 he was appointed trainmaster at Ft. Worth. In 1937 he went with the Rock Island as a trainmaster, holding this position on various divisions, and on May 1, 1942, he was promoted to assistant division superintendent of the Cedar Rapids division, with headquarters at Inver Grove, Minn., the position he held at the time of his new appointment.

Eric B. Herdman, whose promotion to superintendent of the Pueblo division of the Denver & Rio Grande Western, with headquarters at Pueblo, Colo., was reported in the *Railway Age* of June 17, was born in Birmingham, England, on May 20, 1897, and attended King Edward's school at Birmingham and Birmingham University. In May, 1916, he entered railway service as a brakeman on the Cleveland, Cincinnati, Chicago & St. Louis (Big Four), at Bellefontaine, Ohio. In April, 1918, he went with the Atchison, Topeka & Santa Fe as a brakeman at Wellington, Kan., later becoming a brakeman and switchman at Slaton, Tex. On June 1, 1920, Mr. Herdman went with the Southern Pacific as assistant yardmaster at Colton, Calif., later serving as general yardmaster at Calexico, Calif., and at Colton, and assistant trainmaster at El Centro, Calif. In October, 1923, he went

Eric B. Herdman

with the Union Pacific as assistant yardmaster at Rawlins, Wyo., and on March 1, 1924, he was promoted to assistant general yardmaster at North Platte, Neb., and later to general yardmaster at North Platte. From October, 1935, to December 1, 1937, Mr. Herdman served as general yardmaster at Salina, Kan., traveling conductor at Omaha, Neb., and trainmaster at North Platte. On the latter date he went with the Chicago, Rock Island & Pacific as trainmaster at Rock Island, Ill. On September 1, 1939, he was promoted to assistant superintendent at Minneapolis, Minn., and in September, 1940, he was advanced to division superintendent, with headquarters at Dalhart, Tex., subsequently serving in that capacity at El Reno, Okla., and Fairbury, Neb. He went with the D. & R. G. W., in 1943 as assistant trainmaster, with headquarters at Provo, Utah, being promoted to trainmaster at Glenwood Springs, Colo., and to acting superintendent of the Pueblo division in the same year. He remained in the latter position until his new appointment.

Otis H. McFarlin, whose promotion to superintendent of the Memphis division of



Otis H. McFarlin

the Illinois Central, with headquarters at Memphis, Tenn., was reported in the *Railway Age* of June 10, was born at Medina, Tenn., on March 25, 1886, and entered rail-

way service in 1900 as a messenger-brakeman of the Gulf & Interstate (now part of the Santa Fe System), at Beaumont, Tex. In May, 1905, he went with the Illinois Central as a telegraph operator at Greenfield, Tenn., later serving in the same capacity at Dyersburg, Tenn. In December, 1906, he was advanced to agent-operator of the Tennessee division, and in April, 1914, he was promoted to dispatcher and extra chief dispatcher, with headquarters at Fulton, Ky. In January, 1926, Mr. McFarlin was advanced to trainmaster of the Fulton district, with the same headquarters, and in July, 1933, he was transferred to the Chicago district, with headquarters at Champaign, Ill. Two years later he was transferred to the Memphis division, with headquarters at Memphis, and in May, 1942, he was promoted to assistant superintendent of that division, the position he held at the time of his new appointment.

Fred H. Hooper, general superintendent of transportation of the Kansas City Southern and of the Louisiana & Arkansas, with headquarters at Shreveport, La., has been promoted to general manager of both roads, with headquarters at Kansas City, Mo. **J. T. McCorkle,** superintendent of the Kansas City Terminal division of the Kansas City Southern, has been advanced to general superintendent of transportation of both roads, with headquarters at Shreveport, succeeding Mr. Hooper. **Clarence Gibbs,** superintendent of the Northern division of the K. C. S., at Pittsburgh, Kan., has been transferred to the Southern division, with headquarters at Shreveport, and **Nibert Johnson,** superintendent of the Louisiana & Arkansas, with headquarters at Shreveport, has been appointed superintendent of the Northern division of the K. C. S., with headquarters at Pittsburg, relieving Mr. Gibbs. **R. R. Sutter,** superintendent of the Southern division of the K. C. S., has been transferred to the Kansas City Terminal division, replacing Mr. McCorkle.

H. A. Westberg, assistant superintendent of the Galena division of the Chicago & North Western, with headquarters at Chicago, has been promoted to superintendent of the Northern Iowa division, with headquarters at Mason City, Iowa, succeeding **H. D. Purviance,** who has retired because of ill health. **J. H. Kline,** trainmaster of the Iowa division, with headquarters at Clinton, Iowa, has been advanced to assistant superintendent of the Galena division, relieving Mr. Westberg, and **J. F. Fullmer,** assistant trainmaster at Clinton, has been promoted to trainmaster of the Wisconsin division, with headquarters at Kenosha, Wis., replacing **C. A. Hummel,** who has been transferred to the Iowa division, succeeding Mr. Kline.

Mr. Purviance was born at Geneva, Neb., and entered railway service in 1907 as a brakeman of the North Western. He subsequently served as conductor, yardmaster, acting trainmaster and trainmaster at various points of the road until 1936 when he was promoted to assistant division superintendent, with headquarters at Casper, Wyo. One year later he was advanced to superintendent, with the same headquarters, and in 1939 he was transferred to the Sioux City division. In 1941 Mr. Purviance was transferred to the Northern Iowa division, with headquarters at Mason City, remaining in that location until his retirement.

TRAFFIC

J. A. Fyfe has been appointed assistant general freight agent of the Missouri Pacific, with headquarters at St. Louis, Mo., succeeding **W. J. Boewer.**

F. W. Werner, commercial agent of the Chicago, Burlington & Quincy, with headquarters at Kansas City, Mo., has been promoted to general agent, with headquarters at Peoria, Ill., succeeding **W. A. Stingley,** whose death on May 20 is reported elsewhere in these columns.

ENGINEERING & SIGNALING

R. M. Stimmel, chief chemist of the New York, Chicago & St. Louis (Nickel Plate), with headquarters at Lima, Ohio, has been promoted to superintendent of water service, with the same headquarters, a newly-created position.

MECHANICAL

Roy F. Walker, locomotive designing draftsman of the Canadian National, has been appointed locomotive mechanical engineer, with headquarters at Montreal, Que. Mr. Walker, a native of Goderich, Ont., received his mechanical and electrical engineering education at Toronto, Ont., and entered railroad service as a machinist apprentice of the Grand Trunk at York roundhouse, Toronto. Later, he worked as a machinist at Ottawa, Ont., Stratford and Mimico, until 1909, when he became a locomotive fireman at Belleville, Ont. The following year, Mr. Walker joined the staff of the Canadian Locomotive Company at Kingston, Ont., as draftsman and, in 1915, he enlisted with the Queen's Battery, Kingston, as a gunner, later serving, while overseas, as a sapper with the Royal Canadian Engineers. On demobilization in 1919, Mr. Walker joined the employ of the Montreal of the Canadian Locomotive Company at Locomotive Works at Montreal as a designing draftsman, which position he relinquished in September, 1928 to return to the Canadian National as locomotive designing draftsman.

Roy F. Walker

Kenneth Cartwright, mechanical engineer of the New York, New Haven & Hartford, has been appointed chief mechanical engineer, with headquarters as before at New Haven, Conn. The appointment of **Phillip H. Hatch,** formerly assistant mechanical engineer, to succeed Mr. Cartwright as mechanical engineer was noted in the *Railway Age* of May 20. Mr. Cartwright, who was born on March 14, 1890, at West Epping, N. H., received a B. S. degree in mechanical engineering from the Massachusetts Institute of Technology in 1912. He entered the service of the New Haven as a material inspector on June 1, 1914, remaining in that position until June 15, 1918, when he left that road to serve as a lieutenant (j. g.) in the United States Navy. Mr. Cartwright was released from his duties with the Navy on January 26, 1920, and on February 1 of that year he re-entered the service of the New York, New Haven & Hartford as assistant to engineer of tests, becoming general mechanical inspector on December 1, 1923. On June 1, 1925, he was promoted to assistant mechanical engineer, remaining in that capacity until September 16, 1935, when he was again promoted, this time to mechanical engineer, the position he was maintaining at the time of his promotion to chief mechanical engineer.

Kenneth Cartwright

OBITUARY

Paul Maddox, superintendent car department of the Chesapeake & Ohio, died on June 13 at Richmond, Va.

H. S. Meily, retired division engineer of the Pennsylvania, died at a hospital in Wilkes-Barre, Pa., on June 9. He would have been 82 years old on June 21.

E. H. Roy, general superintendent of motive power of the Seaboard Air Line, died on June 17 at his home in Norfolk, Va. He was 60 years old.

W. A. Stingley, general agent of the Chicago, Burlington & Quincy, with headquarters at Peoria, Ill., died in that city on May 20.

GET TOGETHER DEPARTMENT

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RAILROAD MEN
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Mechanical—
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Engineers and Firemen—
All Supervisors—
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Kansas City, Kans.

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For the duration or post-war—save demurrage, switching, extra handling costs, damaging foreign cars, etc.

90, Hopper, Double, 50-Ton
10, Hopper, Side-Discharge, 50-Ton
150, Refrigerator, 40-Ft., 40-Ton
16, Refrigerator, 36-Ft., 30-Ton
17, Ballast, Composite, 50-Ton
25, Box, 36-Ft., 40-Ton, Steel Ends
20, Dump, K & J Automatic, 16-Yd., 40-Ton
3, Dump, Koppel, Drop Door, 20-Yd., 40-Ton
6, Dump, K & J Automatic, 20-Yd., 50-Ton
20, Flat, 40-Ft., 50-Ton
38, Gondola, Composite, 30-Ft. & 40-Ft., 40-Ton
10, Gondola, Steel, 50-Ton, High Side
30, Tank, 8000-gallon, 40 & 50 Ton Trucks

All cars are priced to sell!
IRON & STEEL PRODUCTS, INC.
39 years' experience
13486 S. Brainard Ave. Chicago 33, Illinois
"ANYTHING containing IRON or STEEL"

Use Space in this Section

FOR SALE
1—35 ton Plymouth, gasoline, new 1937.
3—21x28, 85 ton switchers, piston valves, superheated, Walscheart gear, 0-6-0.
2—25x30, 120 ton, 0-8-0 switchers, new 1922, tractive effort 49,500#.
2—20x26, 4-6-0 oilburners, new 1924-27.
2—Cabooses, serviceable condition.
1—Std. two-aspect red & green block signal.
1—Block staff machine—electrically operated.
Exporting & Importing Co.
P. O. BOX 2576
DALLAS, TEXAS

Use space in this Section, when in need of a man or looking for a position

LOCOMOTIVES
1—16x24 American 50-ton saddle tank, 0-4-0
1—19-26 American 67-ton, separate tender, new 1923
2—21x24 Baldwin 78-ton side tanks, 0-6-0, rebuilt
4—23x30 American, 114-ton separate tender, 2-8-0, exceptionally fine condition
1—20-ton Vulcan, std. gauge, gasoline, rebuilt
1—45-ton Plymouth, std. ga., diesel, new 1939

CARS
10—20 cu. yd. Western dump cars, rebuilt
5—20 cu. yd. K&J dump cars, rebuilt
13—30 cu. yd. Magor dump cars, std. gauge. Completely rebuilt.
10—50-ton twin hopper coal cars
22—50-ton composite gondola cars
10—40-ton box cars, steel underframe, 36' leng, rebuilt
50—40-ton box cars, steel underframe, 36' long
1—(Standard) Jordan Spreader car. Fine condition
1—Brill Model 55 comb. passenger & baggage car
WIRE WRITE PHONE
Thomas F. Carey Co., Inc.
120 LIBERTY STREET, NEW YORK 6, N. Y.
Telephone Barclay 7-1770

LIFETIME OPPORTUNITY
Young man, over 30, previous sales experience, wanted to assist owner small profitable railroad industrial supply business. Drawing $100 plus commission, expenses. Lifetime opportunity for man with intelligence, personality, aggressiveness. The right man could secure a part of this company and earn a five figure salary. Complete details, please, ADDRESS BOX NO. 667 RAILWAY AGE, 30 CHURCH STREET, NEW YORK 7, N. Y.

BUY

WAR BONDS

Have You Changed Your Address?

Notice of change of address of subscribers should reach the office of *Railway Age*, 30 Church St., New York, ten days in advance to insure delivery of the following issue to new address. In sending notification of change always include the old address as well as the new.

Name .....

Old Address .....

Position ..... **Company** .....

New Address .....

GENERAL MOTORS DIESELS

In Review

10th Anniversary **OF DIESEL ROAD POWER**

ON AMERICAN RAILROADS

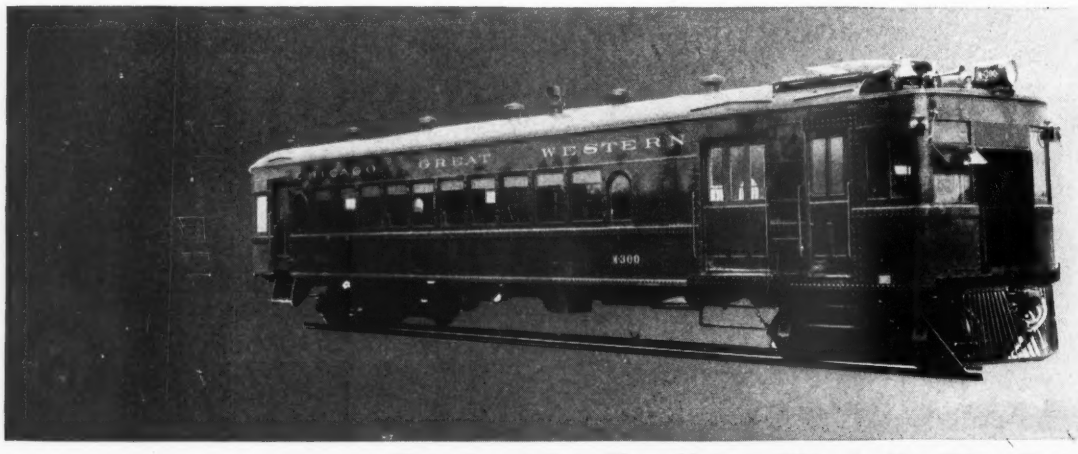
ELECTRO-MOTIVE DIVISION
GENERAL MOTORS CORPORATION LA GRANGE, ILLINOIS, U.S.A.

A DECADE OF PROGRESS

A DECADE OF PROMISE

TEN fleeting years ago the first Diesel streamlined train moved under its own power. The Burlington Pioneer Zephyr was hailed from coast to coast as the mechanical marvel of the day. Millions of persons came to stations or stood along tracks to see the new kind of train.

It has taken ten years for the full significance of that historic occasion to become apparent. What happened that bright day in April, 1934, was not just the birth of a shiny new train. The event represented the dawn of an entirely new era in transportation, an era in which the Diesel engine, freed at last of its shackles of excessive size and weight, was applied to the greatest mass movement of men and goods the world has ever known, the daily transportation of passengers and freight upon American railroads.



First rail car built by Electro-Motive in 1924 and sold to Chicago Great Western Railroad Company, forerunner of the modern Diesel road locomotive

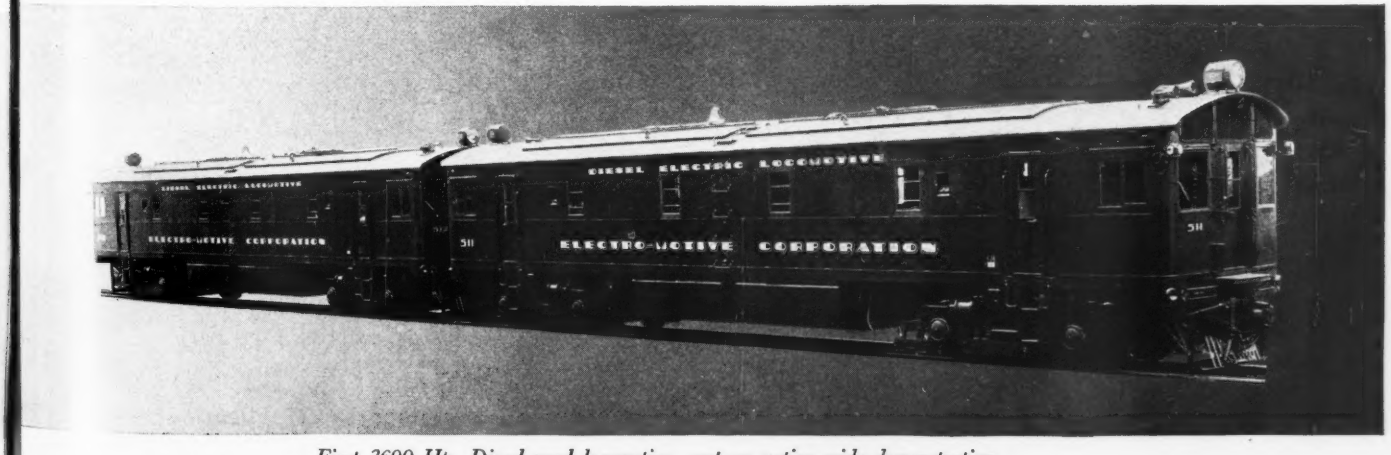
Western crowd typical of those that met the GM Diesel-powered Burlington Pioneer Zephyr on its triumphant inaugural tour from coast to coast in 1934

That first movement of the Pioneer Zephyr signalized the arrival of a new tool with which progressive American railroads could establish an entirely new level of public service.

In the ten year wake of the Pioneer Zephyr have come passenger schedules deemed impossible before General Motors Diesels took to the mainlines, a new conception of passenger comfort, a record for on-time performance never before approached, a new standard of sustained high speed with safety, above all, new records in the mass handling of freight beyond the capabilities of other forms of transportation, all with outstanding economy.

Today as we salute the gallant little Pioneer Zephyr with its one and two-thirds millions of miles of faithful service behind it—no one has attempted to forecast how many more years ahead of it—we stand well launched in the new era.

Electro-Motive Division of General Motors is dedicated to the maintenance of its leadership in the Diesel locomotive field and to render every possible assistance to the railroads in the utilization of this motive-power through the next decade and beyond.



First 3600 Hp. Diesel road locomotive, sent on nation-wide demonstration runs on Class 1 railroads in 1935, from which standard model was developed

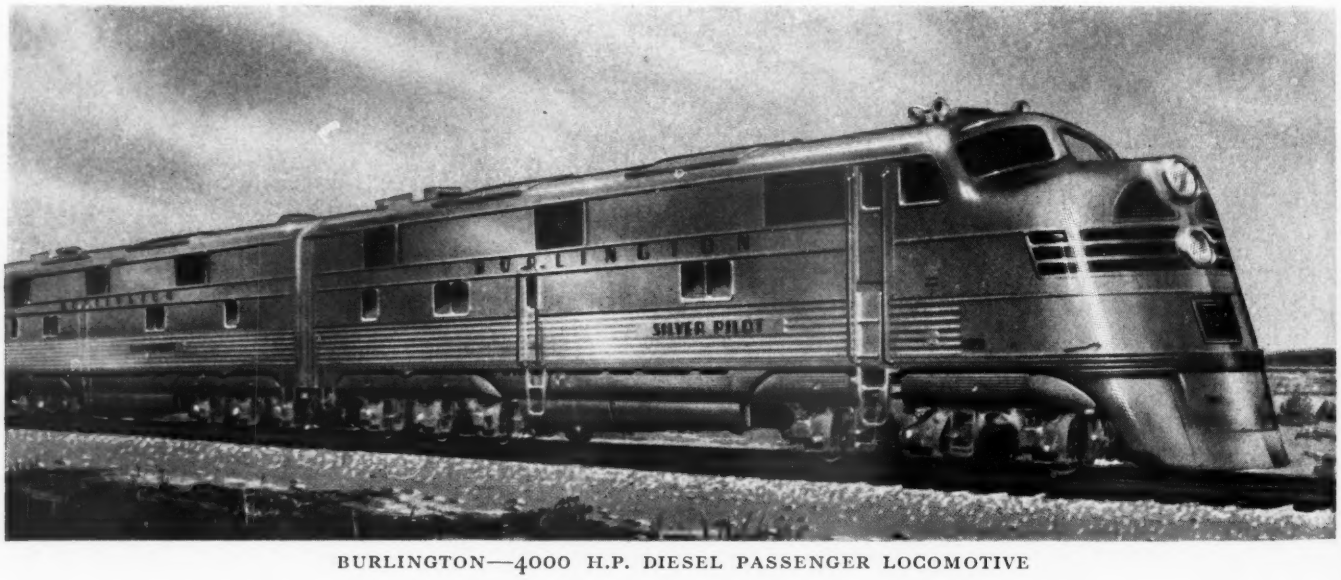
200 MILLION MILES

in Every Class of Service . . .

FOLLOWING the initial success of the General Motors Diesel power plant in the Pioneer Zephyr, Diesel locomotives to cover every class of railway service have been developed by Electro-Motive. More than 1400 units of this power are in service on more than seventy-five American railroads.

The full line of General Motors Diesel locomotives includes: 600 horsepower switchers; 1000 horsepower switchers; 1000 horsepower combination road and switcher locomotives; 2000 horsepower transfer locomotives; 2000, 4000 and 6000 horsepower passenger locomotives, and 2700 and 5400 horsepower freight locomotives.

Among advantages of these locomotives that have been established by more than two hundred million miles in the severest service, the more apparent are: Faster scheduled operations, greatly decreased operating and maintenance costs, higher availability, freedom from costly supporting services, less wear on track, uniform operation in all variations of weather, greater ease of service, and an important reduction in stand-by losses.



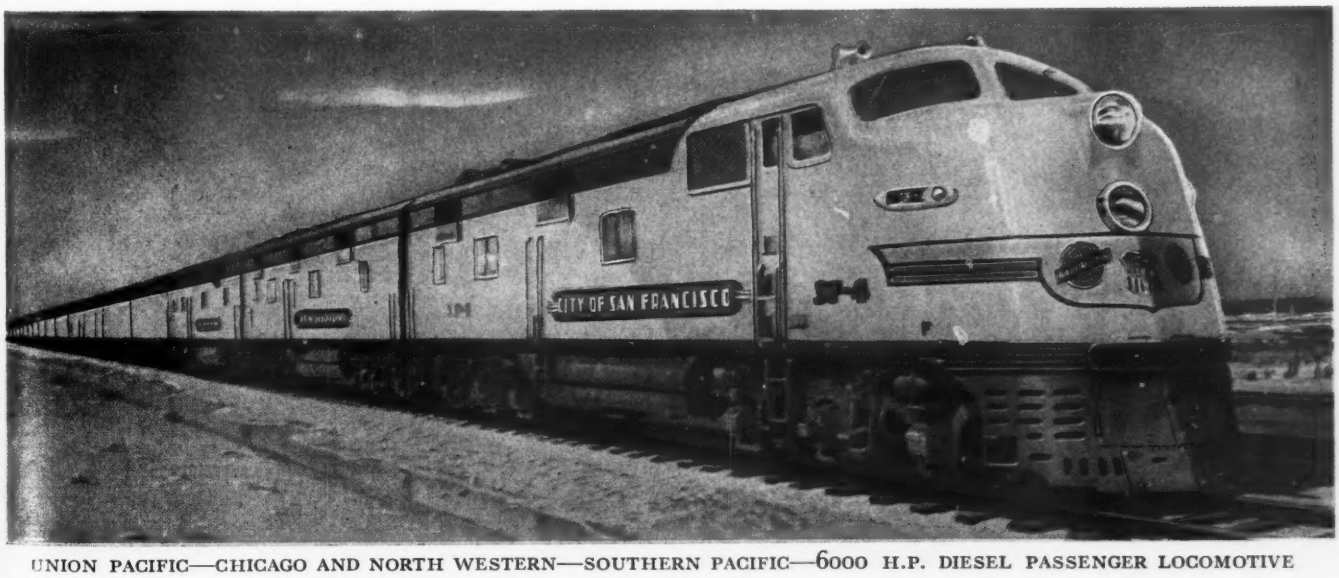
BURLINGTON—4000 H.P. DIESEL PASSENGER LOCOMOTIVE

From Texas to Minnesota and from Chicago to the Rockies Burlington's famed Zephyrs honeycomb the Middle West. They are uniformly powered by GM Diesels, growing out of the Pioneer Zephyr. Other less streamlined but none-the-less useful trains, such as the Exposition Flyer are GM Diesel-powered. In addition to the Pioneer Zephyr the streamlined GM powered fleet includes the Mark Twain Zephyr, two Denver Zephyrs, two Twin City Zephyrs, two Texas Zephyrs, the Silver Streak Zephyr, the Zephyr Rocket, the Sam Houston Zephyr and the Ak-Sar-Ben. Some of the world's most spectacular schedules are included in the operation of these trains. Notable among these schedules is the sixteen hour run over the 1034 mile Denver-Chicago route of the two Denver Zephyr trains, as well as the six hour and fifteen minute normal schedule of the Twin City Zephyrs between Chicago and St. Paul. Many records have been set by the 27 GM Diesel units in the Burlington fleet, which have an average availability over a ten year period of 95.3 per cent. In December of 1943 twenty-six units operated 359,719 miles with 100 percent availability.

General Motors Diesel Passenger Locomotives make possible . . .

BOSTON AND MAINE—MAINE CENTRAL—600 H.P. DIESEL PASSENGER LOCOMOTIVE

Blood brother to the Pioneer Zephyr and still faithfully operating on its daily round trip between Boston, Massachusetts and Bangor, Maine via Portland is the Flying Yankee, one of America's earliest Diesel-powered streamlined trains. Like the Pioneer Zephyr it is equipped with a GM Diesel power plant engineered and supplied by Electro-Motive. Its advent in February 1935 introduced Diesel motive-power to New England and evoked the same enthusiastic response from the public in that section that has followed the inauguration of Diesel service throughout the United States. Although it was of the earliest design of General Motors two-cycle Diesel engine, in fact one of the first dozen of the engines ever built, the 600 Hp. prime mover in this train still does its daily job of 500 miles after more than nine continuous years of service in which the train has been operated more than 1,500,000 miles. Like its fellow trail blazer, the Pioneer Zephyr, the Flying Yankee now boasts a fleet of Diesel descendants in the form of GM freight locomotives and switchers on the Boston and Maine.

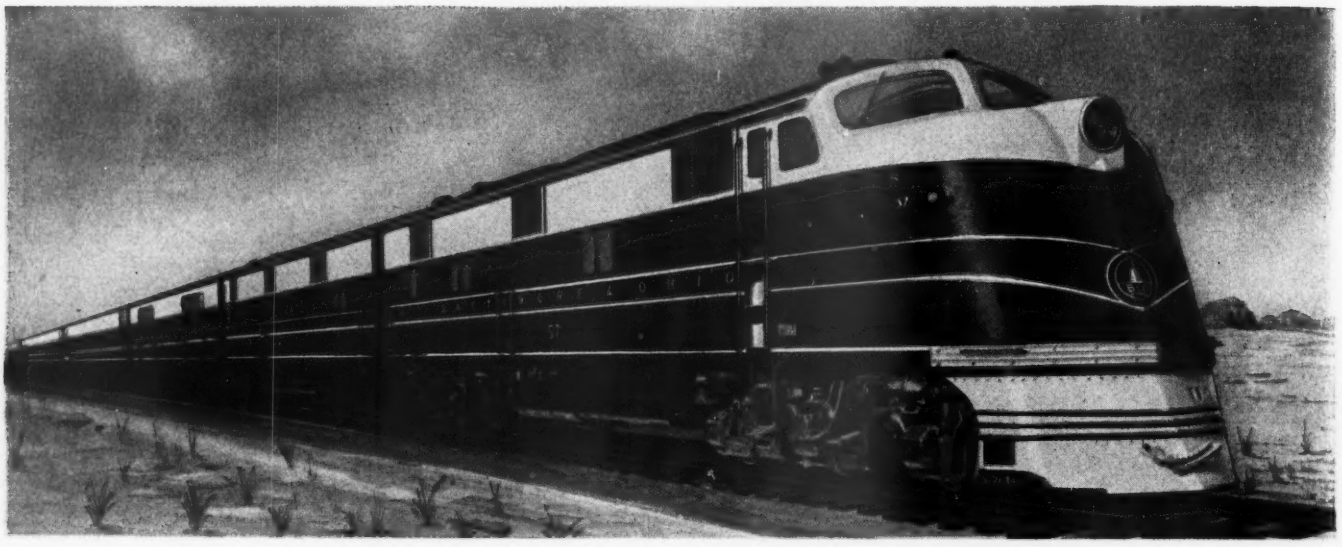


UNION PACIFIC—CHICAGO AND NORTH WESTERN—SOUTHERN PACIFIC—6000 H.P. DIESEL PASSENGER LOCOMOTIVE

The City of San Francisco, jointly owned and operated by the Union Pacific, Chicago and North Western and Southern Pacific, is one of the world's longest, most luxurious and fastest scheduled streamliners, operating between Chicago and San Francisco. From its inception in June 1936, it has been powered by GM Diesel passenger locomotives. One 6000 Hp. and one 5400 Hp. GM Diesel handle the current service, likewise the two sister trains of the Union Pacific and Chicago and North Western, the City of Los Angeles between Chicago and Los Angeles. The original service of both the City of San Francisco and City of Los Angeles was handled by one train each. These proved so popular that a train was added to each schedule giving semi-weekly service in both directions. Other GM Diesel-powered trains in the famous Union Pacific fleet are the City of Portland, between Chicago and Portland, Oregon, and the two trains comprising the City of Denver in daily service between Chicago and Denver, Colorado. In addition, the Union Pacific uses GM Diesel 4000 horsepower passenger locomotives between Kansas City and Denver.

General Motors

New standards in fast passenger train operation . . . . .



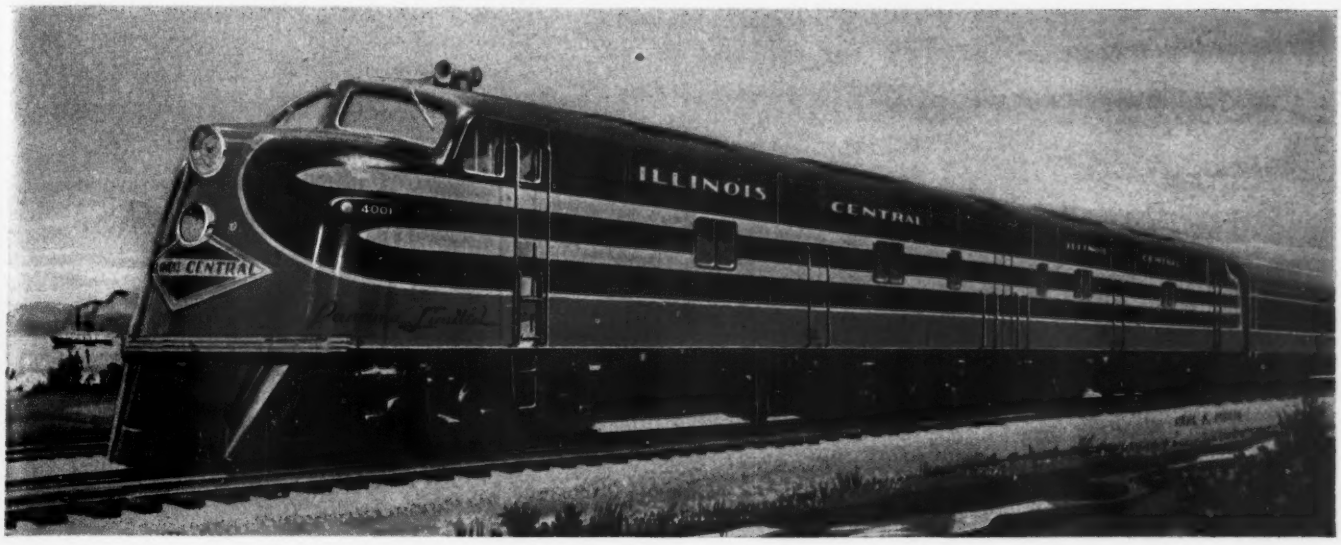
BALTIMORE AND OHIO—4000 H.P. DIESEL PASSENGER LOCOMOTIVE

Late in 1830, Peter Cooper's "Tom Thumb" became the first steam locomotive on the Baltimore and Ohio, leading the way to a new era in transportation. More than a century later (*August 1935*), the B&O again took the lead by placing in service the first separate Diesel road locomotive on any American Railroad. Today, General Motors Diesel road locomotives haul their fleet of famous passenger trains—the Capitol Limited, National Limited, Royal Blue, Columbian, Diplomat, Ambassador, and Shenandoah. One of the high lights of Diesel operation was the performance of Diesel locomotive No. 56 which powered the "Capitol Limited" between Washington, D.C. and Chicago for 365 consecutive runs of 771 miles, totaling 281,415 miles, without missing a trip. Between the date of delivery, June 28, 1938 and February 27, 1940 locomotive No. 56 operated 436,718 miles with only three days out of service for repairs—an availability record of 99.6 percent . . . Today, the B&O leads the east with 85 General Motors Diesel Locomotive Units totaling 108,000 horsepower in all classes of service—with more to follow.

SANTA FE—4000 H.P. DIESEL PASSENGER LOCOMOTIVE

In May 1936, the Santa Fe inaugurated a revolutionary new transcontinental flier, the Super Chief, to bring California within one business day of Chicago and within two business days of the eastern seaboard. Powered by a General Motors 3600 Hp. Diesel locomotive, it made the 2,227 miles between Chicago and Los Angeles in 39 hours and 45 minutes—an average speed of 56 miles per hour. This was the forerunner of the new era of deluxe high speed passenger service on the Santa Fe, whose famous fleet now consists of the widely known Diesel-powered trains, the Super Chief, El Capitan, Chicagoan, Kansas Cityan, San Diegan, the Tulsan and Golden Gate, and frequently the Chief. While the Super Chief is the outstanding example of the heavy high-speed long distance trains, the Kansas Cityan and the Chicagoan, powered by 1800 Hp. GM Diesel locomotives, are typical examples of Santa Fe's faster service with shorter trains. Diesel service calls for a seven and one-half hour run between Chicago and Kansas City. The Santa Fe Diesel passenger fleet operated more than sixteen million locomotive miles up to February 1944.

Smooth starts and stops for greater travel comfort . . . .



ILLINOIS CENTRAL—4000 H.P. DIESEL PASSENGER LOCOMOTIVE

The Illinois Central was one of the early railroads to apply GM Diesel power to passenger operation in the Green Diamond, still doing its daily fast schedule, deluxe stint between Chicago and St. Louis. To this has been added the unique Panama Limited deluxe Pullman train between Chicago and New Orleans and the deluxe coach train, the City of Miami, between Chicago and Miami, Florida. The Panama Limited, conceived long before, went into service just as war clouds broke over the United States and immediately began a contribution to winning the war which it has maintained ever since, namely, the rapid transportation of vital military and civilian personnel between the production centers of the Middle West and the military camps scattered along the southern end of its run, and New Orleans, an important ocean shipping point. Its GM Diesel maintained record for on-time service through all kinds of weather has been a high factor in its usefulness. The Illinois Central also is an important user of GM switchers and transfer locomotives to move freight trains through the Chicago switching area.

ROCK ISLAND LINES—1200 H.P. DIESEL PASSENGER LOCOMOTIVE

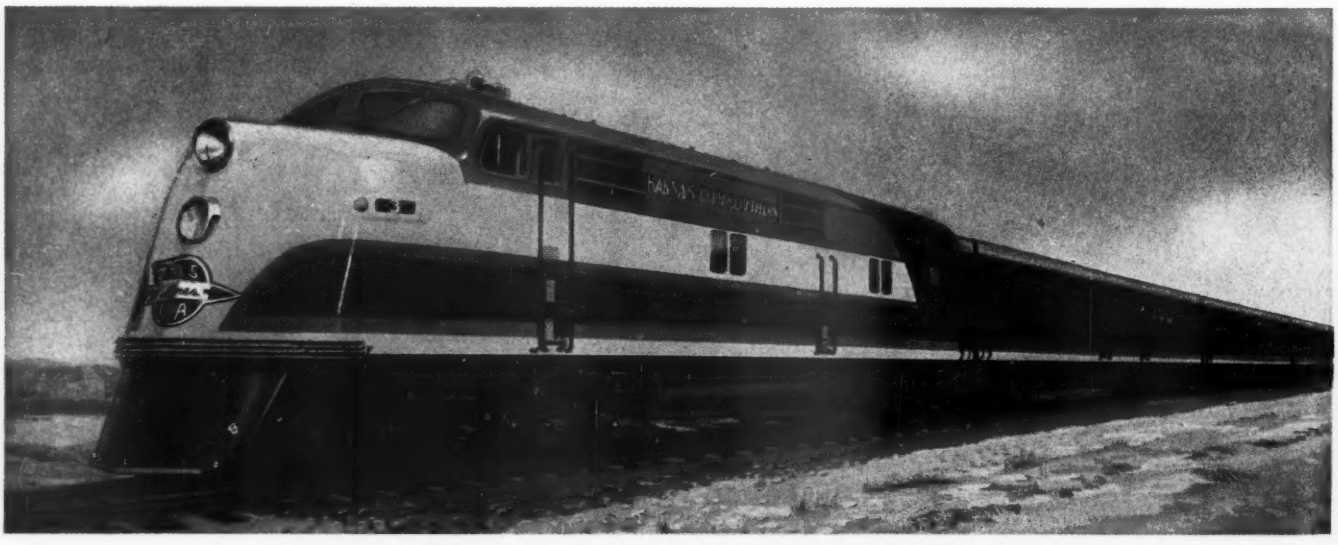
The six-year (*1937-1943*) performance records of three "Rocket" Trains of the Rock Island are remarkable. In September 1937, "Peoria Rocket," No. 601, the first of 15 General Motors passenger Diesels, was placed in service between Chicago and Peoria. In six years of operation, this train as a unit was out of service only ten of 8,816 consecutive trips—*99.8 percent operation*—and had substitute service for only 9,044 of the 1,400,000 miles operated in that same period—*99.3 percent operation*. The Peoria Rocket negotiates the 161 mile trip four times daily (644 miles) at an average speed somewhat more than a mile-a-minute. An even more remarkable record is that of the Rocket operating between Kansas City and Minneapolis, 489 miles. Since the inauguration of this service, the train has made every one of its 4,386 schedule trips, totaling more than 2,150,000 miles, with protection service required on only 7,555 miles—*99.9 percent operation*. The Chicago-Des Moines Rocket recently rounded out six years, having completed 1,565,053 miles, with substitute service required on only five of 4,390 trips—*99.8 percent operation*.

GENERAL MOTORS LOCOMOTIVES

Decreased operating and maintenance costs . . . . . .

SEABOARD RAILWAY—6000 H.P. DIESEL PASSENGER LOCOMOTIVE

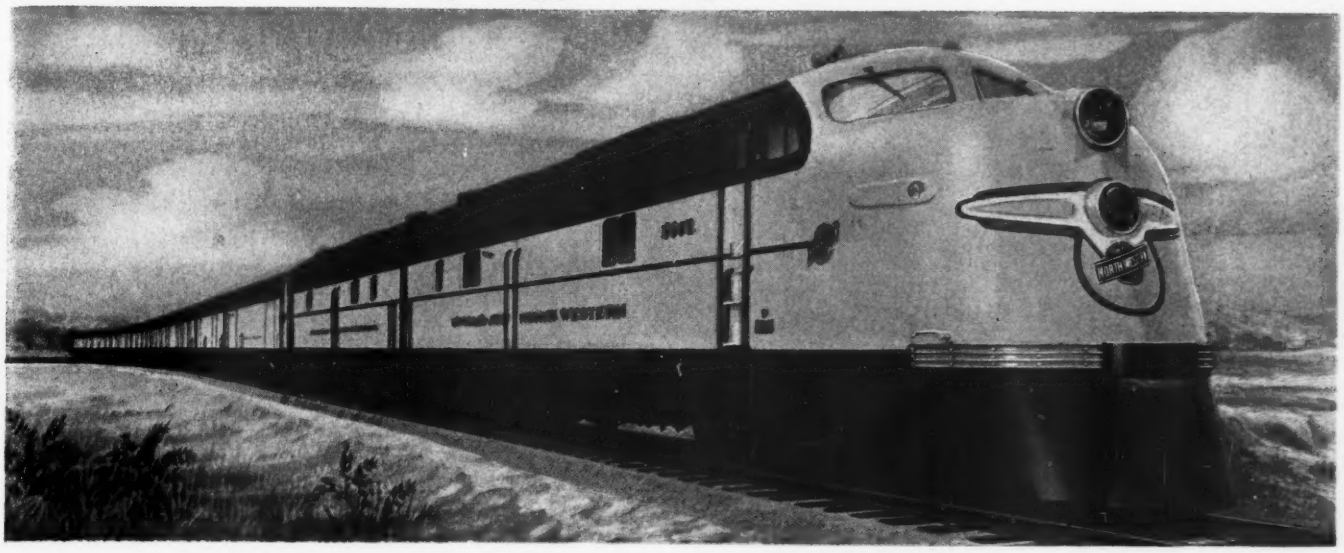
In January 1926, the Seaboard placed in service its first Electro-Motive gas-electric rail motor car. This is worthy of mention because it was in the production of this type of equipment that Electro-Motive gained its early experience and from which very logically evolved the modern Diesel locomotives for all classes of service. Two GM Diesel-powered rail motor cars, the first of their kind, were installed in April 1936. In October 1938, the Seaboard became the first railroad in the South to adopt Diesel power for mainline service when it put GM Diesel locomotives on its great fleet of "Silver Meteor" and "Orange Blossom Special" ultra-modern high speed passenger trains, powered with General Motors Diesel passenger locomotives. This provided considerably faster schedules from New York and Washington to Florida. Today (*April 1944*), the Seaboard has in service 20 GM 2000 Hp. Diesel passenger units which have accumulated close to 23,000,000 miles and an average availability record of over 95 percent. On-time records of the New York-Florida service were greatly improved by Dieselization.



KANSAS CITY SOUTHERN—2000 H.P. DIESEL PASSENGER LOCOMOTIVE

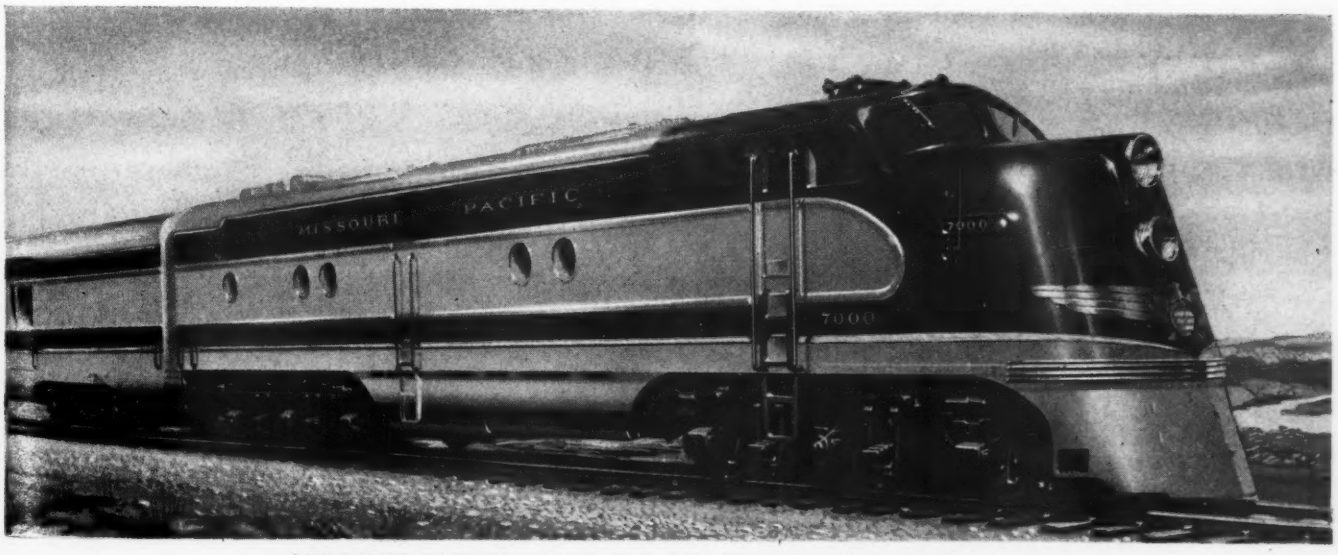
Modern deluxe fast passenger trains came to a section hitherto without the benefits of such service in 1939 when the Kansas City Southern put the Southern Belle into operation with GM Diesel passenger locomotives at the head of the three consists. Five 2000 Hp. Diesels maintain the twenty-four hour service on the 872 mile daily run between Kansas City and New Orleans. The route weaves through Kansas, Missouri, Oklahoma, Arkansas, Texas and Louisiana, encountering some difficult terrain through the Ozarks. High availability and on-time marks have been set in the operation. The on-time performance has been a prime factor in the rendering of a valuable wartime service to the section of the country traversed. The train connects two important war activity centers and taps territory in which vital raw materials and a number of military concentrations are located. Consequently it handles a heavy flow of military and civilian personnel engaged in vital war travel. The usual outstanding Diesel operating and maintenance economies prevail.

Freedom from costly supporting services . . . . . .



CHICAGO AND NORTH WESTERN—4000 H.P. DIESEL PASSENGER LOCOMOTIVE

In addition to the notable fleet of jointly owned GM Diesel passenger locomotives which it operates with two other western roads, described elsewhere in this publication, the Chicago and North Western provides the state of Wisconsin with one of the finest fleets of Diesel operated trains enjoyed by any state in the nation. Flagships of this fleet are of course the two Twin Cities 400's which link Chicago and St. Paul, Minneapolis, via Milwaukee. Two 4000 Hp. GM Diesels are assigned to handle the Twin Cities 400 each direction in the afternoon and make the return trip at night with the standard Pullman North Western Limited. This required 841 miles of operation daily from each locomotive, half of it on a schedule requiring 63.3 miles per hour average. The two locomotives set up an amazing availability record when they handled this service for two full years with only one trip missed. They operated 1,200,000 miles with 100 percent availability. Other C & NW trains handled by GM Diesels are the Peninsula 400, Capitol 400, Shoreland 400, Valley 400, two Commuter 400's and four City of Milwaukee 400's.



MISSOURI PACIFIC—2000 H.P. DIESEL PASSENGER LOCOMOTIVE

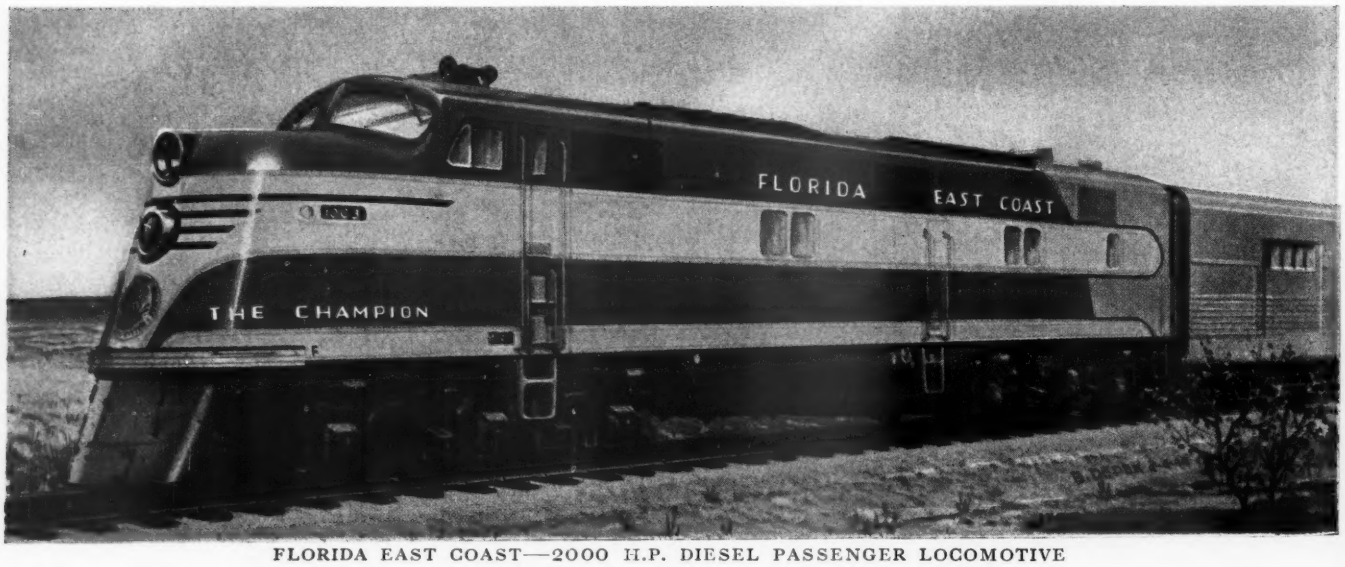
In October 1939, the Missouri Pacific inaugurated its fleet of General Motors Diesel-powered "Eagles," providing faster service with maximum safety and travel comfort between principal points on the system . . . Two 2000 Hp. Diesel locomotives Nos. 7000 and 7001, the first to be placed in operation, are providing deluxe daylight service between St. Louis and Omaha . . . In August 1940, Diesel No. 7100 started the very popular service between Memphis and Tallulah, La. To provide improved daily high-speed service between St. Louis and Denver, two 4000 Hp. General Motors Diesel-powered "Eagles" Nos. 7002 and 7003 entered service in October 1941. Today (*April 1944*), these five Diesel Passenger locomotives, comprising seven Diesel units and totaling 13,000 Hp., have accumulated 4,119,211 service miles with 96.2 percent availability. To complement Diesel freight and passenger service, the Missouri Pacific is operating 15 GM Diesel switchers, including two 900 Hp. road-switchers, which have operated 3,121,604 miles with an average availability of 93.6 percent.

GENERAL MOTORS LOCOMOTIVES

Uniform operation in all kinds of weather . . . . . .

ATLANTIC COAST LINE—4000 H.P. DIESEL PASSENGER LOCOMOTIVE

The pool of twenty-nine 2000 Hp. GM Diesel passenger locomotive units operated by the Atlantic Coast Line has been of great assistance in meeting especially difficult problems growing out of the heavy war load superimposed upon a peacetime passenger movement with high seasonal fluctuations. High availability and the flexibility features of the GM Diesel equipment have been thrown into great prominence in this situation. All of the featured trains of the ACL to Florida are operated behind GM Diesel power from Richmond, Virginia to their various southern terminals. Most famous of the several widely known ACL crack Diesel trains is the fleet of Champions, both deluxe Pullman and deluxe coach consists running to the east and west coasts of Florida from New York. Due to the location of many Army and Navy training centers along the route, the ACL is called upon for heavy troop movements which must dovetail into other military schedules. The ability of Diesels to keep closely to schedule has been of high usefulness in helping the railroad to discharge this responsibility.



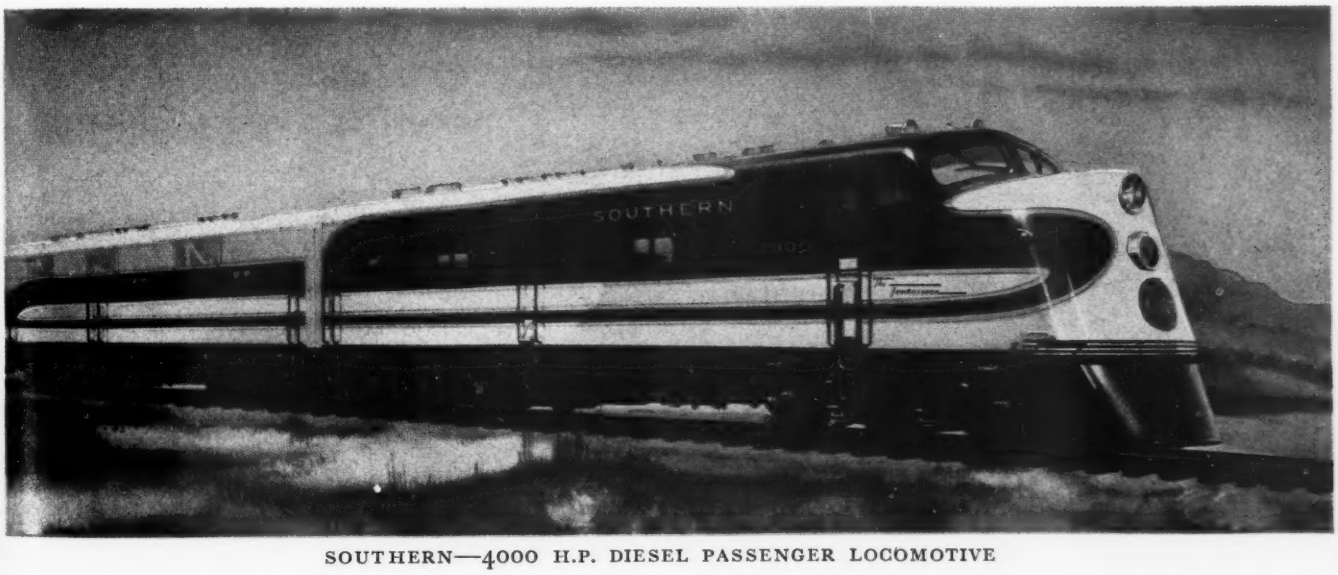
FLORIDA EAST COAST—2000 H.P. DIESEL PASSENGER LOCOMOTIVE

Besides operating its own deluxe Henry M. Flagler in high speed service between Jacksonville and Miami, Florida, with GM Diesel power, the Florida East Coast maintains a pool of GM Diesel passenger locomotives for the joint operation with the Atlantic Coast Line of the famous fleet of Champions between Richmond and Miami on the New York to Miami run. Thus the FEC shares all the wartime problems of the long run down the coast made more serious by the concentration of Army and Navy training centers to take advantage of southern climatic conditions. Some outstanding records have been set by this fleet of GM Diesel passenger locomotives. Among them is the 95.7 percent availability mark set by six locomotives in 4,300,000 miles of operation. Locomotive No. 1002 in the Champion pool operated 22,000 miles a month for four years on 2,210 mile round trips, a total of one million miles without major overhaul. The Florida East Coast has placed an important order for additional GM passenger locomotives to increase the present Diesel service.

High availability with fewer "time-outs" for service . . .

UNION PACIFIC—4000 H.P. DIESEL PASSENGER LOCOMOTIVE

The locomotive pictured here is one of the pool of GM Diesel passenger locomotives which the Union Pacific has in operation in the regular service between Denver and Kansas City. They round out the GM Diesel fleet which the Union Pacific operates jointly with the Chicago and Northwestern on the City of Denver, City of Los Angeles, and City of Portland trains and with the Chicago and Northwestern and Southern Pacific on the City of San Francisco trains. Here again the high availability, flexibility, economy, on-time dependability and ability to operate at sustained high speeds with safety stand out in regular passenger service as these advantages do in the more spectacular Streamliner service. The Union Pacific fleet grew out of America's first streamlined train, the City of Salina, with a distillate engine power plant designed and supplied by Electro-Motive. In addition to the thirty-one GM Diesel passenger locomotive units operating on the Union Pacific system, a fleet of thirty-six 1000 Hp. GM Diesel switching locomotives helps keep the heavy wartime freight tonnage of the UP moving.

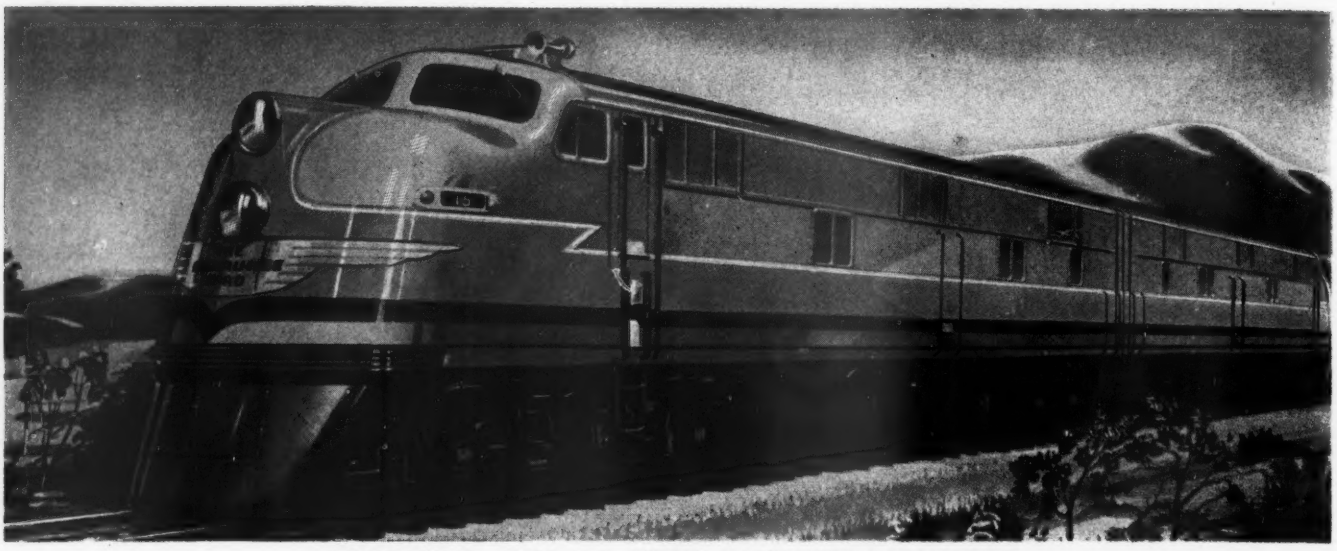


SOUTHERN—4000 H.P. DIESEL PASSENGER LOCOMOTIVE

The Southern Railway uses GM Diesel passenger locomotives for its three crack trains linking the greatest cities of the Old South with the national capital. Two of these trains were created after Diesel mainline power was made available by Electro-Motive to serve special traveling needs that had become apparent as the Diesel motive power decade advanced. These trains are The Southerner, high speed streamlined deluxe coach train operating between New Orleans and Washington, D. C., and The Tennessean, streamlined Pullman train connecting Memphis and Washington. Co-incident with the appearance of these new trains in 1941, The Crescent, fast Pullman train between Washington and Atlanta, also was Dieselized. A high on-time record has marked the locomotive fleet since it was put into service, despite its severity, and the remarkable availability record of 96.4 percent of the eleven passenger units was established in the operation up to February 29, 1944. The total mileage amassed by the locomotives up to that date was 4,600,000.

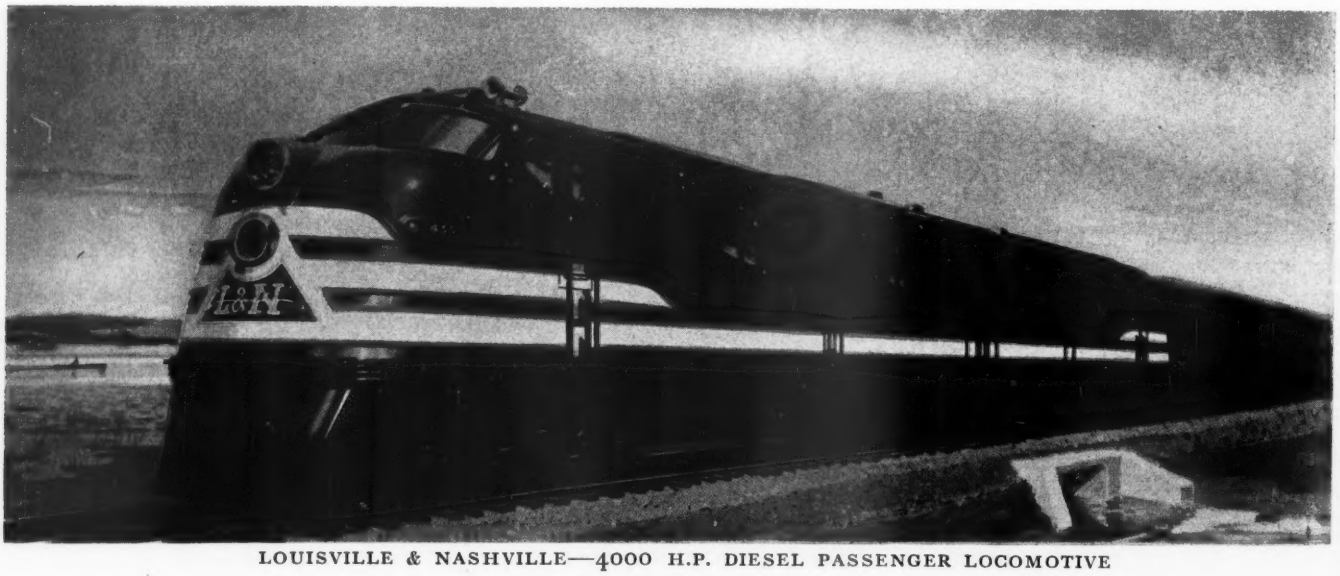
GENERAL MOTORS LOCOMOTIVES

Standardized parts with greater ease of service.



MILWAUKEE—4000 H.P. DIESEL PASSENGER LOCOMOTIVE

The beautiful Morning Hiawatha of the Milwaukee Road long has been known as one of America's most profitable passenger trains. A GM Diesel 4000 Hp. passenger locomotive was applied to its operation in September, 1941. This locomotive handled the fast schedule service between Chicago and St. Paul-Minneapolis with high availability continuously for two years and four months before major overhaul. It was kept in operation with only "running repairs" at terminals between trips. As in other trains operating in the severe winter climate conditions prevalent throughout the northern tier of states the record for on time performance, regardless of weather, traceable to the fact that operating efficiency of GM Diesels is not affected by outside temperatures has contributed heavily to the high favor in which travellers regard the Hiawatha. The Milwaukee is another of the growing list of railroads which now have Diesel coverage of all classes of service, using GM freight locomotives on a western run and being the owner of thirty GM Diesel switchers.



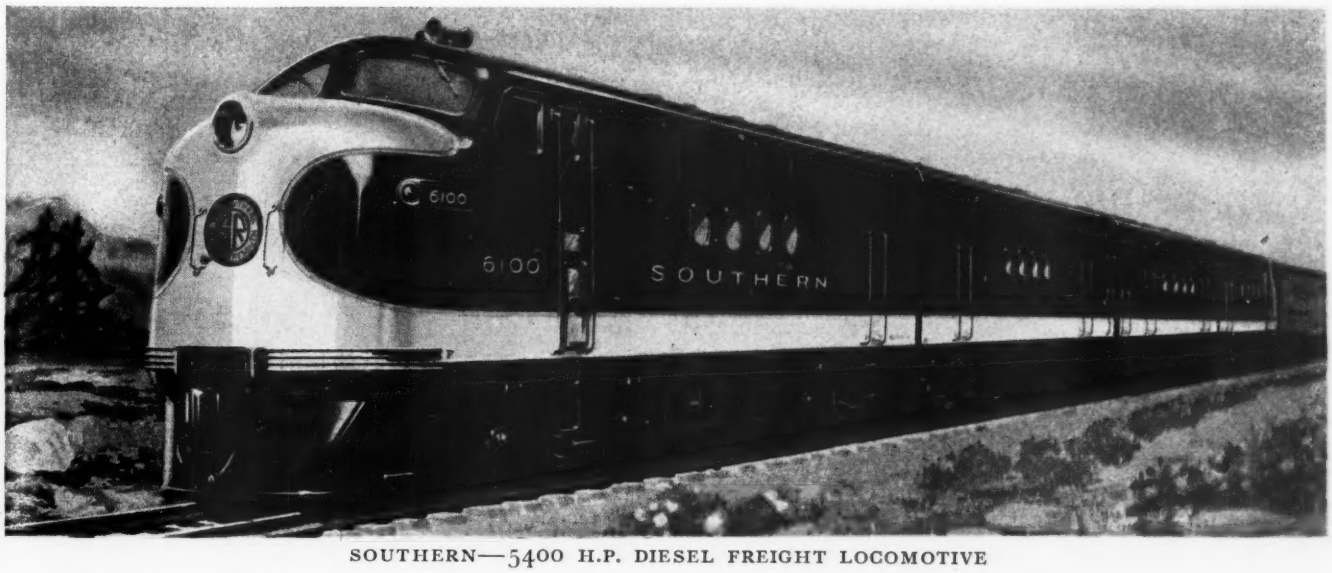
LOUISVILLE & NASHVILLE—4000 H.P. DIESEL PASSENGER LOCOMOTIVE

Because of the marked increase in normal passenger traffic and, in addition, the large number of trains required for the movement of our armed forces, the Louisville & Nashville, like many other larger railroads not having surplus heavy passenger power, was forced to haul these extra passenger trains with freight locomotives . . . The need for freight power became extremely critical, and to relieve this condition most expeditiously, the Louisville & Nashville placed in service eight 4000 Hp. General Motors Diesel road locomotives . . . These eight GM Diesels relieved the situation with a minimum expenditure of critical materials and with outstanding economy and operating efficiency. Performance of the eight GM Diesels made it possible not only to relieve the situation as to freight locomotives but also to release heavy passenger locomotives to help relieve the freight locomotive shortage. For example, from July to November of 1943, they operated at 100 percent availability. From May 1942 to April 1944, these eight passenger Diesels operated approximately 2,700,000 miles with an average availability of 98 percent.

GM Diesel Freight Locomotives provide . . . . . .

SANTA FE—5400 H.P. DIESEL FREIGHT LOCOMOTIVE

Transportation history was made in April 1941, when the Santa Fe inaugurated the world's first main-line Diesel freight service. Because of the GM Diesel freight locomotive's ability to outperform any other type of freight locomotive, proven as the Santa Fe's Diesel fleet was rapidly increased, this motive power has from the start been assigned to the divisions where operating conditions were most difficult due to profile and traffic congestion. On one of the early trips, with no attempt for speed or tonnage records, Santa Fe No. 100 with a maximum of 68 cars (3,150 tons) made the 1761.8 mile run between Argentine, Kansas and Los Angeles in 54 hours, 35½ minutes running time—an average speed of 32.3 miles per hour. As of April, 1944, the Santa Fe has increased its total of GM freight Diesels in service to 184 units (with more to follow) to lead the world with 228 General Motors Diesel locomotive units, in all classes of service, totaling 309,900 Hp., with an accumulated mileage of well over 26 million and an availability record exceeding 91 percent. Locomotives on order will greatly increase the Santa Fe Diesel fleet.



SOUTHERN—5400 H.P. DIESEL FREIGHT LOCOMOTIVE

The Southern Railway System is one of the great arteries for the flow of vital war materials from the south and southwestern sections of the country. One of these vital materials is oil. Immediately upon delivery of the first of its fleet of eight 5400 Hp. GM Diesel freight locomotives, the Southern put it into the handling of these symbol oil trains through a section of the line that had been a bottleneck. As other Diesels on order became available they were thrown into this service with the result that the Southern established an enviable record for the rapid delivery of oil to the Eastern seaboard at a time when this was one of the nation's most pressing war needs. The Southern, at the time this was written, was using its GM Diesel freight locomotives on the mountain divisions between Danville, Kentucky and Oakdale, Tennessee, and between Chattanooga, Tenn. and Meridian, Mississippi, as well as from Alexandria to Monroe, Virginia. GM switchers, with the GM passenger locomotives described elsewhere in this brochure round out the Southern's rapidly growing Diesel service.

GENERAL MOTORS
LOCOMOTIVES

Increased tonnage hauling capacity . lower operating costs

GREAT NORTHERN—5400 H.P. DIESEL FREIGHT LOCOMOTIVE

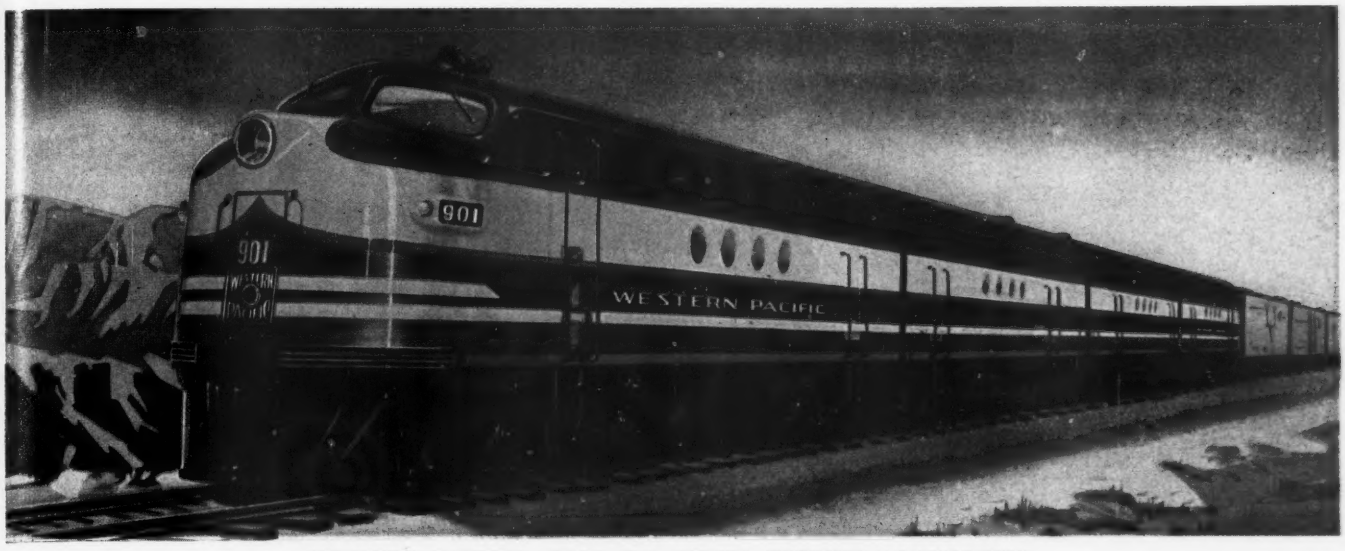
Movement of ore is one of the heavy war contributions of the Great Northern. Government demands required a great increase in tonnage moved from Butte to Great Falls, Montana. To move heavier tonnage required more powerful locomotives but the increase in the form of power then used would have required strengthening of bridges and other extensive alterations in the right of way. The problem was solved by putting 2700 Hp. GM Diesel freight locomotives on this job. Tonnage was increased without alteration of track, tunnels or bridges. Schedules also were speeded.

The Great Northern uses 5400 Hp. General Motors Diesel locomotives to speed up the movement of the long, heavy through freights on its mainline. The 5400 Hp. locomotive makes time not only going up the long grades due to its higher tractive effort but also on the down grade due to the ability to maintain higher down speed with safety through the use of the Electro-Motive development of the electric brake. The Great Northern also has a fleet of 47 GM Diesel switchers. The freight fleet has an average availability of 95.6 percent and switchers 94.8 percent.

MILWAUKEE—5400 H.P. DIESEL FREIGHT LOCOMOTIVE

The Milwaukee Road is noted throughout the railroad world for its two sections of electrified line in the Rocky and Cascade Mountains, totalling 656 miles. When originally installed, these two stretches of electrification cut many hours off of Milwaukee freight and passenger train operation between Chicago and Tacoma, Washington. Between the two electrified sections, however, there remained a 226 mile mountain division from Avery, Idaho to Othello, Washington, full of difficult operating conditions, such as grades and curves necessitating slow-downs. Wartime freight movement brought this situation into abnormal prominence and Milwaukee officials sought a way of eliminating it. They found the answer in two 5400 Hp. GM Diesel freight locomotives which now keep the heavy flow of freights moving between the two electrified sections without congestion and with such dispatch that if war need arises additional tonnage can be handled. The Milwaukee has placed an important additional order for GM locomotives for further expediting of freight movement.

Faster schedules with smoother handling of equipment . .



WESTERN PACIFIC—5400 H.P. DIESEL FREIGHT LOCOMOTIVE

War more than doubled the normal volume of freight handled by the Western Pacific between Salt Lake City and the Pacific Coast through Feather River Canyon. Starting in November 1941 the Western Pacific received delivery of six 5400 Hp. GM Diesel freight locomotives which have been put into service wherever the job was most difficult in the mountain territory. These locomotives are credited by the Western Pacific with having materially aided it in meeting its tremendous war load. Up to February 29, 1944 the fleet had covered 834,525 miles. The locomotives were averaging 9149 miles per month, all in mountain service. They were regularly assigned to the difficult divisions between Oroville, California and Elko, Nevada; Elko and Salt Lake City, and Keddie and Bieber, California. On the basis of the outstanding improvement accomplished by the locomotives now in service, the Western Pacific has orders on file which will double their present fleet. The Western Pacific supplements the advantages gained by the use of GM freight locomotives by the use of GM switchers at several points.

DENVER & RIO GRANDE WESTERN—5400 H.P. DIESEL FREIGHT LOCOMOTIVE

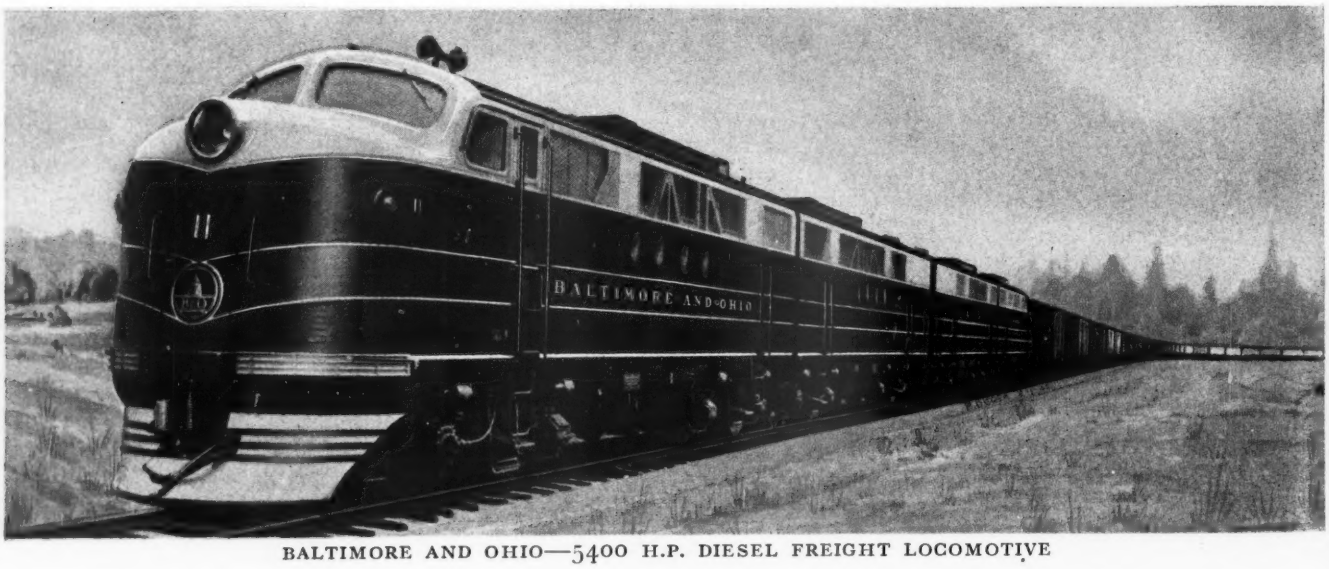
The Denver & Rio Grande Western assigns General Motors Diesel freight locomotives to the heavy war tonnage movement on the mainline Moffat Tunnel route between Denver and Salt Lake City. This 570 mile line is widely known for its sharp curves and unusual number of heavy grades, due to the ruggedness of the terrain in the vicinity of the Continental Divide. In fifteen months of operation on this rugged route the first three 5400 Hp. GM Diesels to go into service handled tonnage 13.7 per cent faster than on previous schedules with an increase in availability of 36 per cent. The success of the earlier installations in this severe service led to the decision by this railroad to further apply the advantages of Diesel motive power. Nine 5400 Hp. GM locomotives were in service as of April 1944 with more to be added as war manufacturing conditions permit. This successful operation has been watched with unusual interest because so much of it is in high altitude. (*Moffat Tunnel, 9,238 feet.*) Due to certain features of their design GM Diesel engines are not materially affected by such altitude.

GENERAL MOTORS LOCOMOTIVES

Elimination of expensive supporting facilities . . . . . .

SEABOARD—5400 H.P. DIESEL FREIGHT LOCOMOTIVE

The torpedoing of coast-wise shipping, particularly petroleum, forced upon the railroads an enormous volume of "water traffic" in addition to the already unprecedented record volume of freight. The Seaboard route made it particularly susceptible to increased traffic from this cause, since it follows the Atlantic seacoast. GM Diesel freight locomotives were ordered to help meet the problem. The first 5400 Hp. locomotive was delivered in June 1942 and since then a total of eight have been put into service between Richmond, Virginia and Savannah, Georgia. Up to January 31, 1944 this fleet had covered 2,620,944 miles with outstanding records as to tonnage, speed and availability. The Seaboard already had been an important user of GM passenger and switching locomotives. These locomotives in all classes of service totalled a fleet of 62 units with 92,000 horsepower. The road locomotives alone had covered more than 25,000,000 miles of service by the end of February 1944, practically all of which called for superior performance over former power with respect to tonnage, speed and adherence to schedules.



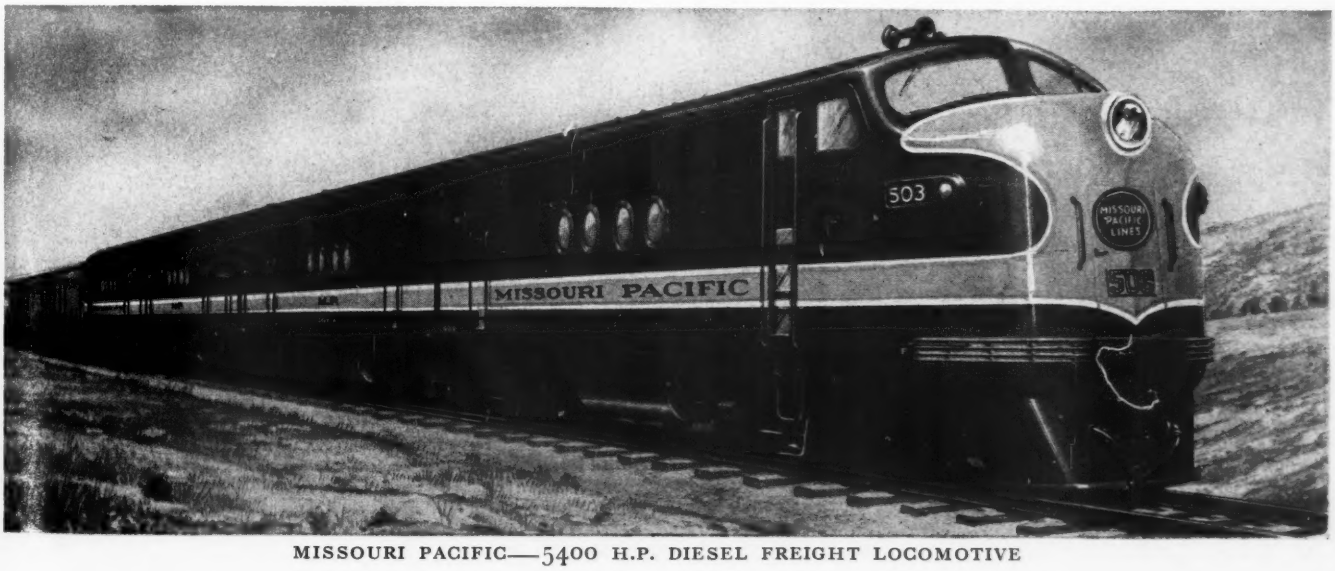
BALTIMORE AND OHIO—5400 H.P. DIESEL FREIGHT LOCOMOTIVE

The Baltimore and Ohio, the first eastern railroad to adopt Diesel passenger locomotives, again made history when one of their new 5400 Hp. General Motors Diesel freight locomotives hauled a solid train of 81 tank cars of oil—715,000 gallons—5300 gross tons—from Chicago to Philadelphia (Twin Oaks), Pa. . . . This was an unusually heavy through-rail shipment of oil and the entire run of 911 miles was made with the same locomotive. Five stops were made for customary crew changes and inspections, but at only two of these stops was it necessary to refuel the locomotive . . . Today (*April 1944*), six of these Freight Diesels are in service—three between Willard, Ohio, and Philadelphia—three between Cumberland, Md., and Washington, Indiana . . . These new GM Diesels have made it possible to release a considerably larger number of other heavy locomotives for important services elsewhere. Complementing GM passenger and freight Diesels are 35 GM Diesel Switchers with an accumulated mileage of more than 4,000,000 and with 96.1 percent availability.

Higher availability . . minimum service and repair time losses .

BOSTON AND MAINE—5400 H.P. DIESEL FREIGHT LOCOMOTIVE

A new record for performance over the 186 miles between Boston and Mechanicville, N. Y., was recently established by the Boston and Maine on a regularly-scheduled freight train run—"B-M 5." The average load of this train is 3000 actual tons. One of their new 5400 Hp. GM Diesel freight locomotives, hauling 125 freight cars (*more than a mile of train*), totalling 3839 actual tons, made a non-stop run in six hours and twenty-five minutes as compared with the usual average run of approximately ten hours and requiring stops for water enroute. 28% More Tons—36% Less Time. Four of these freight Diesels are now (*April 1944*) in service with more to follow. Complementing Diesel road power are 16 GM Diesel switchers, the first of which went into service in August 1936. Up to April 1944, these switchers have operated well over three million miles with an average availability of 91 percent. In keeping with this national reputation, these switchers have contributed heavily to keeping up the flow of vital war freight through yards and terminals.

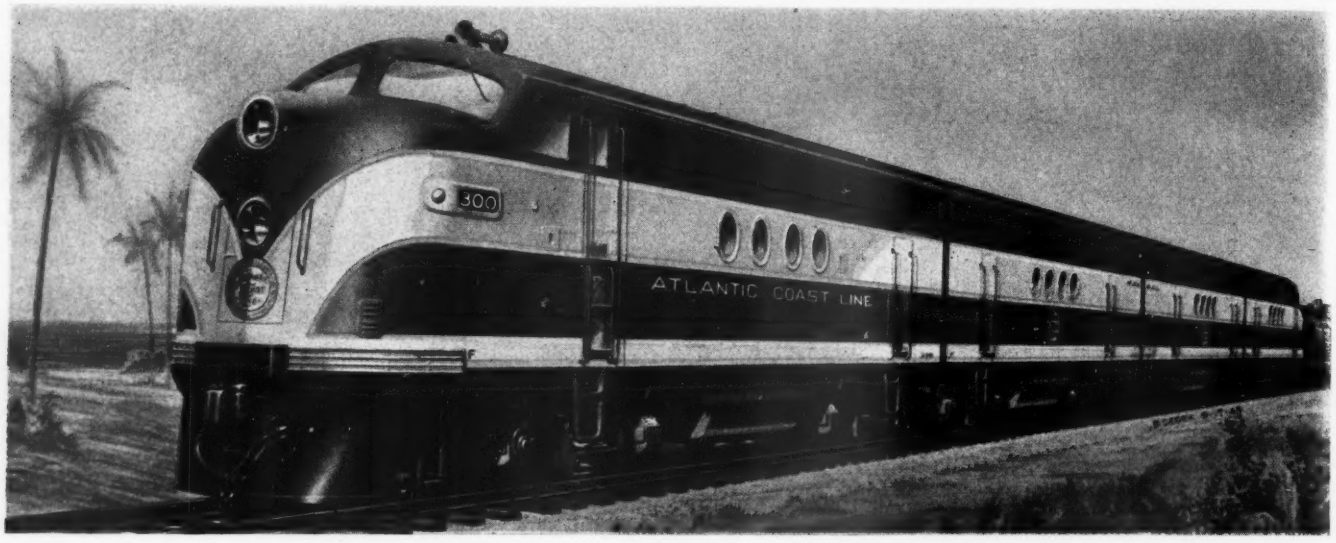


MISSOURI PACIFIC—5400 H.P. DIESEL FREIGHT LOCOMOTIVE

The Missouri Pacific is another railroad which has joined the ranks of those using triple GM Diesel motive-power service, with switching, passenger and freight locomotives in its fleet, which is to be greatly augmented when war conditions permit deliveries upon current orders. This railroad uses both 2700 Hp. and 5400 Hp. GM Diesel freight locomotives between Dupo, Illinois, and Texarkana, Texas, including the hard pull through the Ozarks. On a test run, a 5400 Hp. locomotive just delivered handled 7,064 actual tons, on the 515-mile run between Dupo and Texarkana. On another test run the same locomotive handled 6835 actual tons over the 515-mile route in eighteen hours and fifteen minutes less than the symbol train schedule for this mileage. Fifteen GM switchers complement the work which the freight locomotives are doing toward easing the war load upon Missouri Pacific equipment while seven passenger locomotives handle the road's famous fleet of Eagles in fast service between principal points with high availability, economy and on-time records.

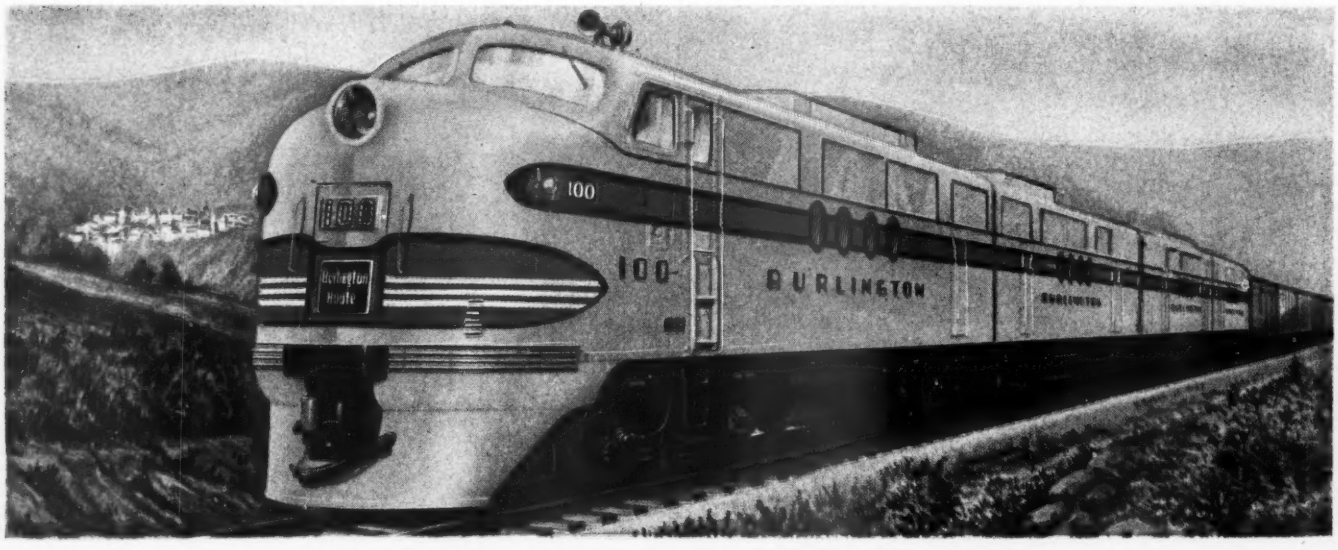
GENERAL MOTORS LOCOMOTIVES

Increased carrying capacity on existing track facilities . .



ATLANTIC COAST LINE—5400 H.P. DIESEL FREIGHT LOCOMOTIVE

Railroads operating along the southern sector of the Atlantic seacoast faced a peacetime problem of meeting high fluctuations in seasonal loads due to the fact that they link the North with vacationland Florida, plus serving a rapidly growing southern industrial section in the intermediate territory. The war superimposed upon the Atlantic Coast Line the increased freight traffic incident to the establishment of many Army and Navy training centers in the favorable southern climate plus the natural location of ports of embarkation and defense all along the coast. To help meet this situation, the ACL ordered GM Diesel freight locomotives which, as rapidly as conditions permit, are being delivered to augment the important fleet of GM Diesel passenger locomotives and switchers which the road already had in service. The ACL has been using its GM Diesel freight locomotives in the divisions between Waycross, Georgia to Richmond, Virginia; Waycross, Georgia to Jacksonville, Florida and in some operations between Jacksonville and Richmond, chiefly in the critical movement of perishable foods so badly needed in northern cities.



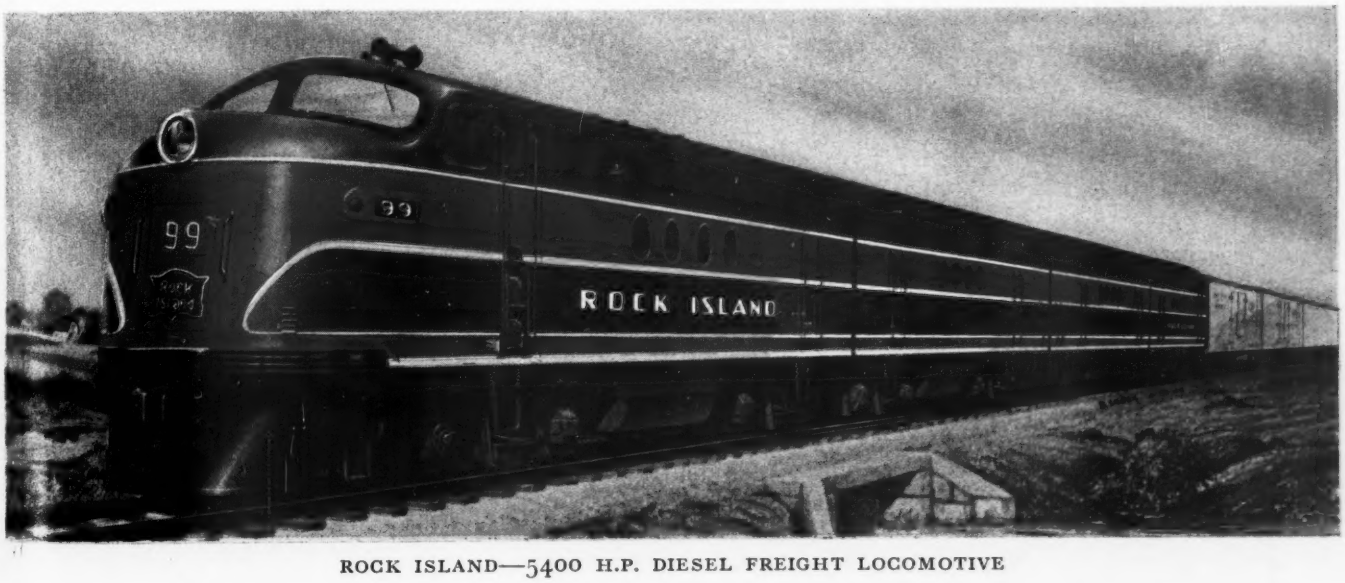
BURLINGTON—5400 H.P. DIESEL FREIGHT LOCOMOTIVE

Diesel operation in all classes of service became a fact upon the Burlington Lines December 31, 1943 when the first of a large order of GM 5400 Hp. Diesel freight locomotives was delivered. A second and third followed shortly and others will be put in operation as war conditions permit. The locomotives were immediately assigned to the uphill operation between Lincoln and Denver this being the point wherein it was decided their ability to move high tonnage faster would be the most useful contribution to ultimate victory over the Axis. Others will be assigned in accordance with war freight movement needs as rapidly as they go into service. The freight movement is further assisted by the forty-three GM Diesel switchers which help keep yards clean at various points on the Burlington system. The 27 GM passenger locomotive units complete the Burlington's Diesel fleet. The Burlington's Diesel freight locomotives are equipped with the Electro-Motive development of the electric brake which is proving a factor in eliminating delays on long grades.

without costly alterations of existing rails, bridges or tunnels

NORTHERN PACIFIC—5400 H.P. DIESEL FREIGHT LOCOMOTIVE

The handling of long heavy tonnage battle-destined freight over single track mountain grades is one of the pressing wartime problems of many American railroads. These grades are one of the most serious bottlenecks. Practically all railroads with such a problem which have received delivery of GM Diesel freight locomotives during the war have immediately assigned them to such difficult spots. The ability of these locomotives to not only get the tonnage up the grades faster but also to take them down in less time due to the several advantages of the Electro-Motive development of the electric brake recommends them for this service, along with their outstanding superiority in operation upon level profiles. In keeping with this general trend the Northern Pacific which has just recently received delivery of the first two of its order of 5400 horsepower GM Diesel freight locomotives has put them to work in the division between Mandan, North Dakota and Glendive, Montana. The Northern Pacific already was a long-time user of GM Diesel switching locomotives.



ROCK ISLAND—5400 H.P. DIESEL FREIGHT LOCOMOTIVE

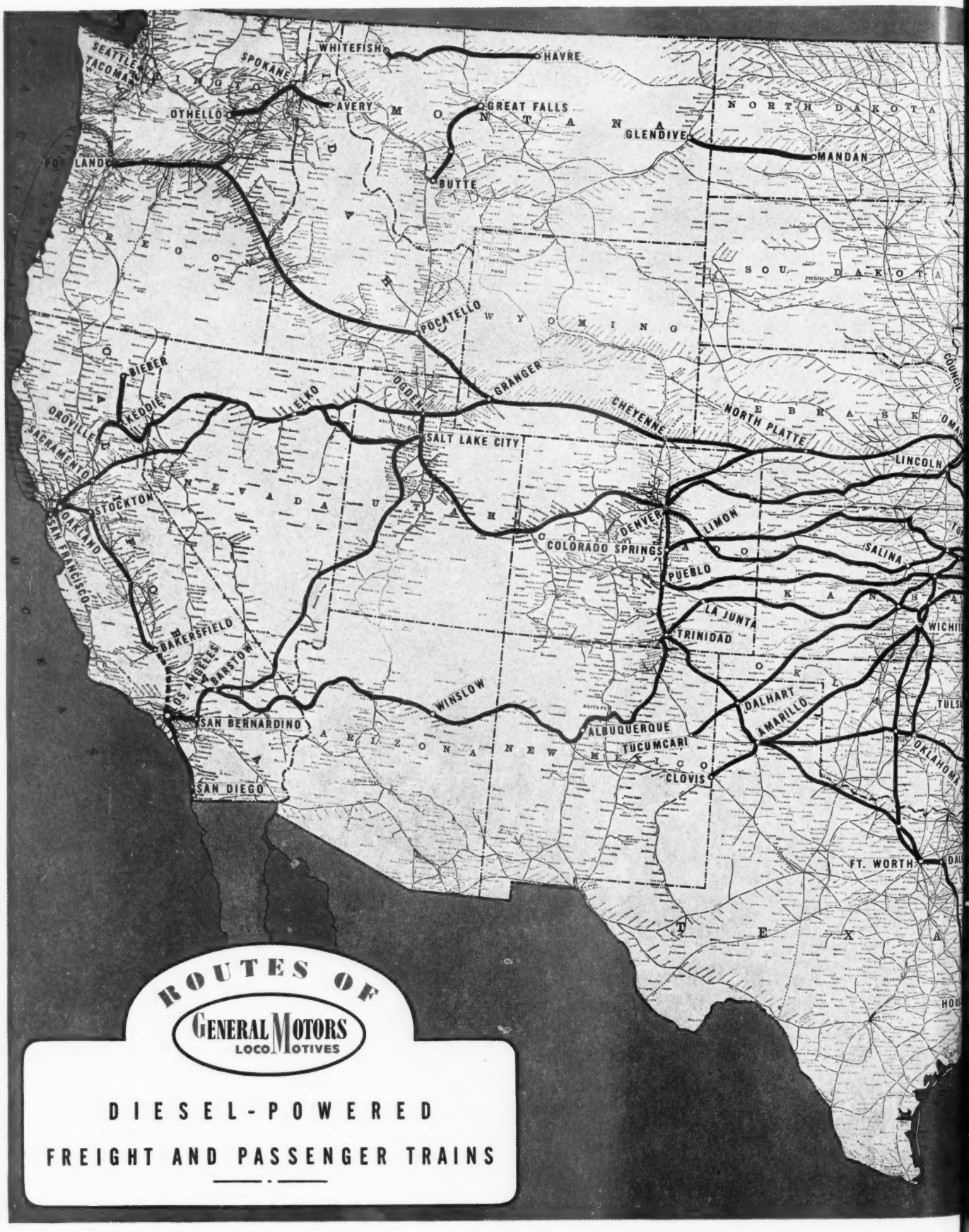
The Rock Island was one of the early roads to adopt GM Diesel power for passenger trains, following this move with extensive utilization of GM switchers in yard service at several points on the system. The Rock Island has moved to complete coverage of all classes of service with representation in Diesel motive-power with a heavy order of 5400 Hp. GM Diesel freight locomotives for assistance in handling its heavy war lading between the Middle West and far western points and in preparation for more efficient operation in the post-war period. Nine of these freight locomotives are to go into service as fast as war conditions permit their construction, and they are expected to maintain the reputation of GM Diesel power on this road established by the performance of the passenger locomotives on the Rockets and the switchers in yard service. Up to April 1944, the forty-five switchers had turned in over 9,000,000 miles with an average availability record of 92.5 percent while the fifteen passenger units had traveled fifteen million miles on the fastest passenger schedules on the road.

GENERAL MOTORS

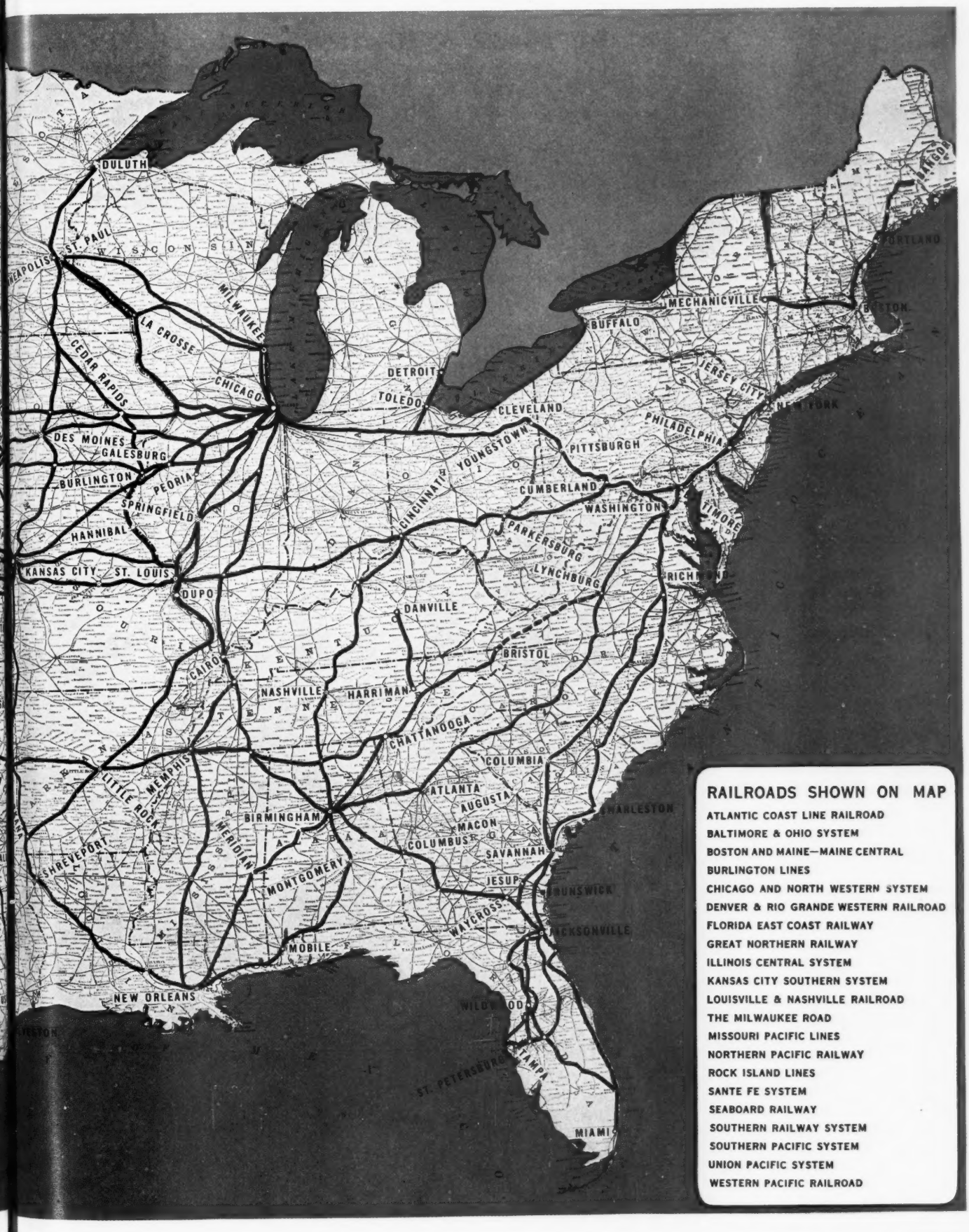
GM Diesel Switchers . . the perfect complement to GM Diesel road

locomotives . . speed up yard movements . . cut terminal delays

GENERAL MOTORS LOCOMOTIVES


SEATTLE
TACOMA
SPOKANE
WHITEFISH
HAVRE
OTHELLO
AVERY
GREAT FALLS
GLENDIVE
MANDAN
PORTLAND
BUTTE
POCATELLO
BIEBER
KEDDIE
OROVILLE
SACRAMENTO
ELKO
OGDEN
GRANGER
CHEYENNE
NORTH PLATTE
LINCOLN
SALT LAKE CITY
STOCKTON
OAKLAND
SAN FRANCISCO
DENVER
LIMON
COLORADO SPRINGS
SALINA
PUEBLO
LA JUNTA
TRINIDAD
BAKERSFIELD
LOS ANGELES
BARSTOW
WINSLOW
SAN BERNARDINO
ALBUQUERQUE
TUCUMCARI
DALHART
AMARILLO
CLOVIS
SAN DIEGO
FT. WORTH
ROUTES OF
GENERAL MOTORS LOCOMOTIVES
DIESEL-POWERED
FREIGHT AND PASSENGER TRAINS

A nationwide net-work of high speed transportation



GENERAL MOTORS DIESELS

Cover the Field of Railroad Motive Power

FREIGHT *5400 Hp. Diesel Locomotive*

This Diesel Freight Locomotive consists of two cab sections and two booster sections arranged for double end control from either cab, each being equipped with one General Motors, sixteen cylinder, V-type, 2 cycle Diesel engine having a bore of 8½", stroke 10" with unit injection system, rated at 1350 Hp. at 800 R.P.M., and developing a total of 5400 Hp. Each engine is direct connected to a D.C. generator, the current of which is distributed to the traction motors mounted on the trucks which in turn are geared to the axles. There are a total of eight 4-wheel trucks under the four sections comprising this locomotive, each being equipped with two traction motors or a total of sixteen motors.

Length	*193'-0"*	*Height*	*15'-0"*	*Traction Horse Power*	*5400*
Width	*10'-6⅛"*	*Weight*	*900,000 lbs.*	*Tractive Effort*	*225,000 lbs.*

PASSENGER *4000 Hp. Diesel Locomotive*

This Diesel Passenger Locomotive consists of one cab section and one booster section, each being equipped with two General Motors twelve cylinder, V-type, 2 cycle Diesel engines having a bore of 8½", stroke 10" with unit injection system, rated at 1000 Hp. each, developing a total of 4000 Hp. Each engine is direct connected to a D.C. generator, the current of which is distributed to the traction motors mounted on the trucks which in turn are geared to the axles. There are a total of four 6-wheel trucks under the two sections comprising this locomotive, each being equipped with two traction motors or a total of eight motors. Engines in the booster unit are arranged for multiple control from the operator's cab.

Length	*141'-0"*	*Height*	*14'-0"*	*Traction Horse Power*	*4000*
Width	*10'-7"*	*Weight*	*616,000 lbs.*	*Tractive Effort*	*110,000 lbs.*

SWITCHER *1000 Hp. Diesel Locomotive*

This locomotive is powered with one General Motors, twelve cylinder, V-type, 2 cycle Diesel engine having a bore of 8½", stroke 10" with unit injection system rated at 1000 Hp. The engine is direct connected to a D.C. generator, the current of which is distributed to the traction motors mounted on the trucks which in turn are geared to the axles.

Length	*44'-5"*	*Height*	*14'-6"*	*Traction Horse Power*	*1000*
Width	*10'-0"*	*Weight*	*248,000 lbs.*	*Tractive Effort*	*62,500 lbs.*

600 Hp. Diesel Locomotive

This locomotive is powered with one General Motors, six cylinder, V-type, 2 cycle Diesel engine having a bore of 8½", stroke 10" with unit injection system rated at 600 Hp. The engine is direct connected to a D.C. generator, the current of which is distributed to the traction motors mounted on the trucks which in turn are geared to the axles.

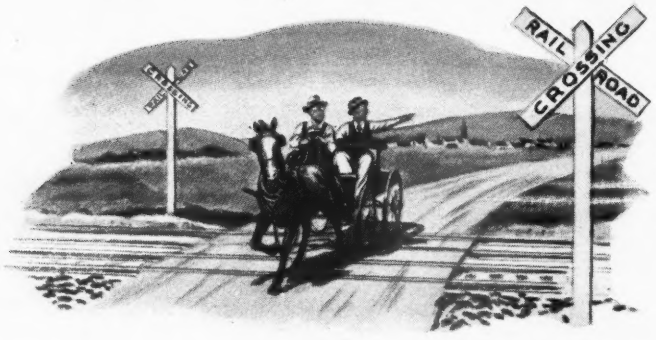
Length	*44'-5"*	*Height*	*14'-4⅝"*	*Traction Horse Power*	*600*
Width	*10'-0"*	*Weight*	*198,000 lbs.*	*Tractive Effort*	*50,000 lbs.*

GENERAL MOTORS LOCOMOTIVES

ELECTRO-MOTIVE DIVISION

GENERAL MOTORS CORPORATION • LA GRANGE, ILLINOIS, U.S.A.

"You Durn Fool—
It is a Steam Engine!"



"STEAM-ENGINE, my Aunt Sarah! A steam-engine's got a tall stack and big belly and wheels goin' round outside. Thet there is one of them streamliners."

"Sure, Lem—but streamlinin' by itself don't tell you nothin'. *All* kinds of engines is bein' streamlined these days —you can't tell what's underneath. The station agent told me so hisself."

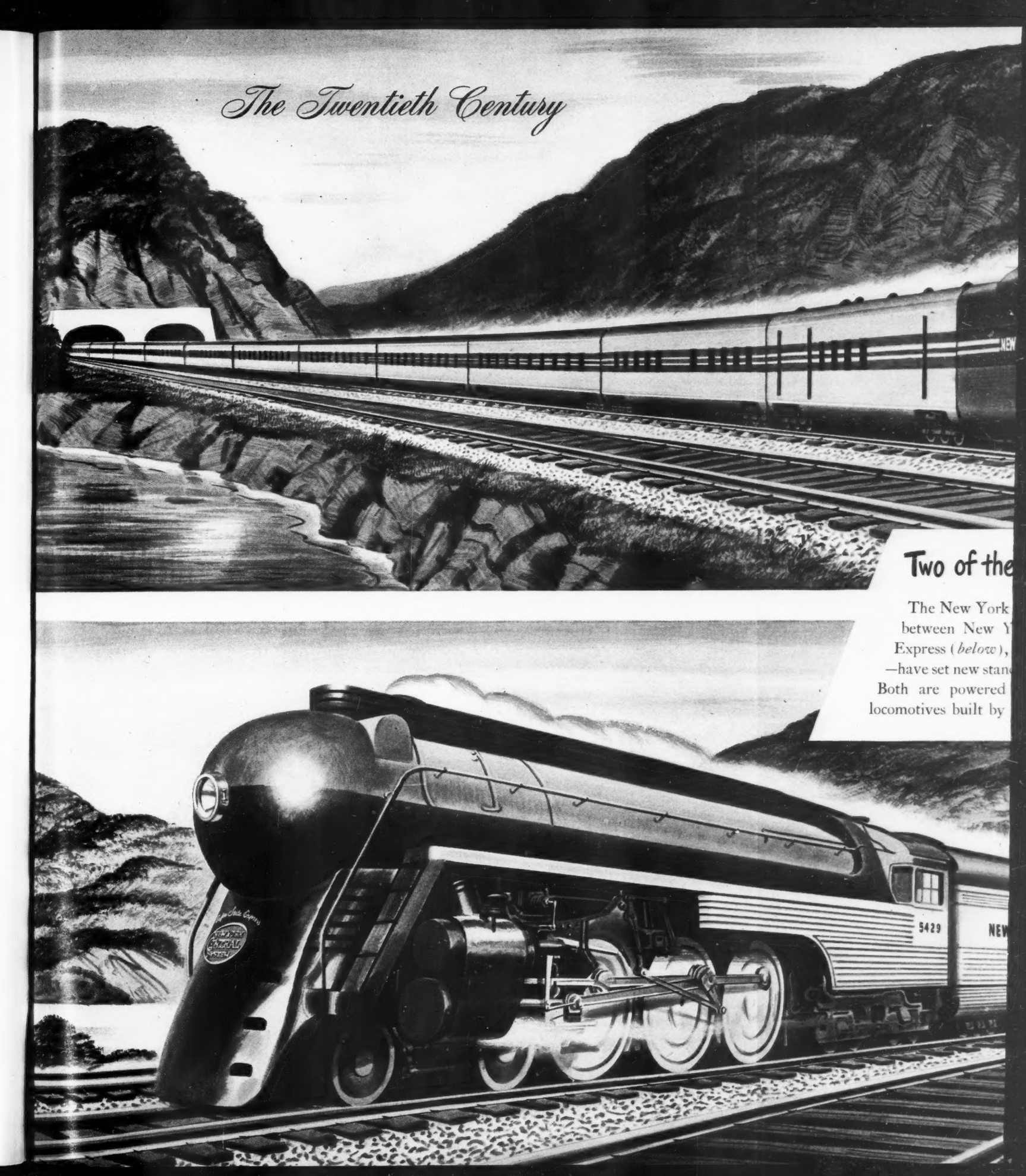
Yes, streamlining today *does* make it difficult for the average person to distinguish between steam, Diesel, and electric locomotives. Speed doesn't supply much of a clue, either, for any of the three types can be built to pull any train at any desired speed.

Which type of locomotive is best for any one particular railroad depends on the nature of the territory to be served, the kind and amount of load to be hauled, and many other factors. Here at American Locomotive we build *all three*—for we know from a hundred years of experience that only a careful study of a railroad's requirements can determine which type of locomotive is the modern locomotive for the job.

Today, a large percentage of America's crack passenger and freight trains are pulled by American Locomotive engines. Five such famous trains are pictured in this folder. Each American Locomotive shown is unsurpassed at its particular job because each was built for that particular job.

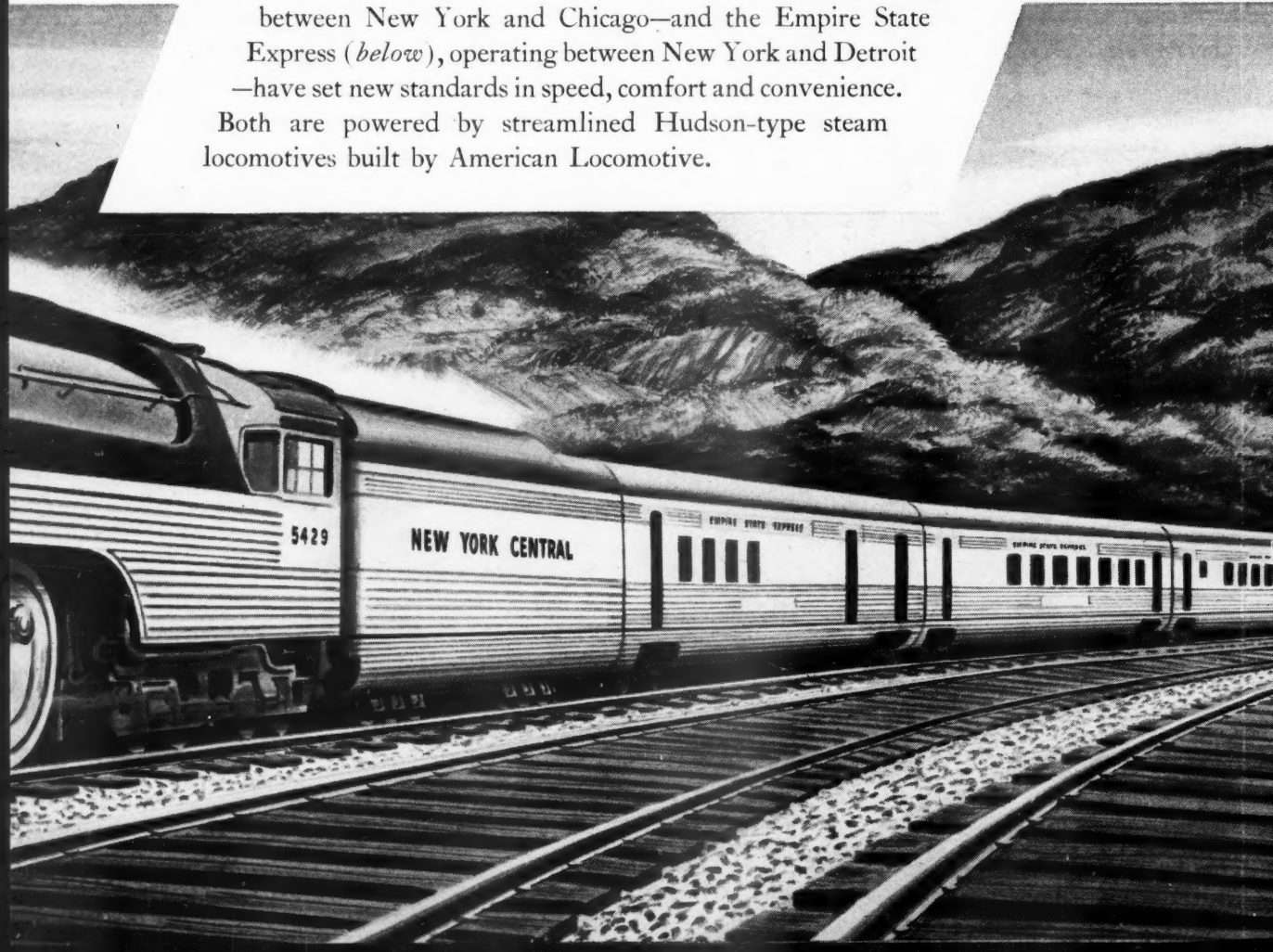
American Locomotive

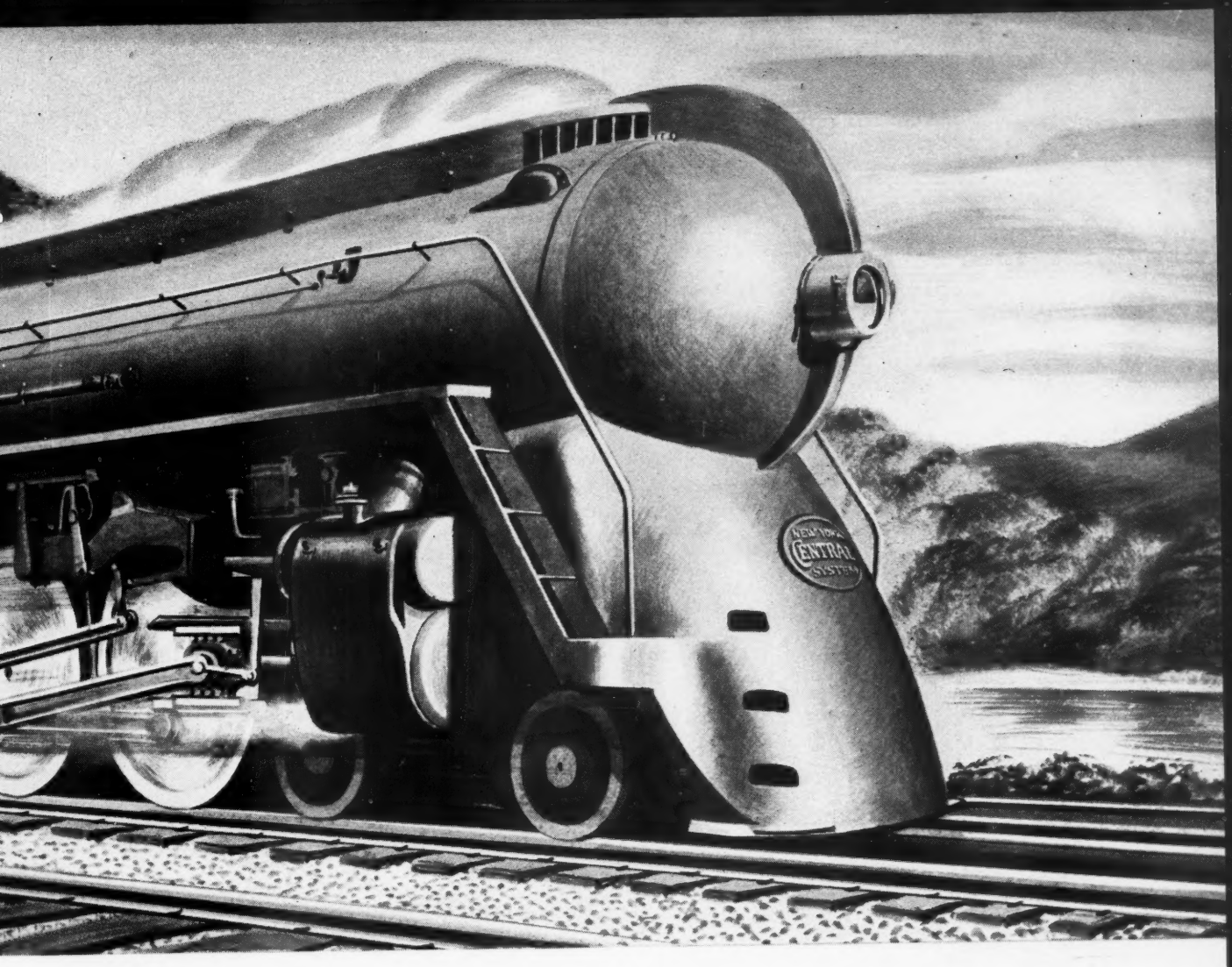
NEW YORK

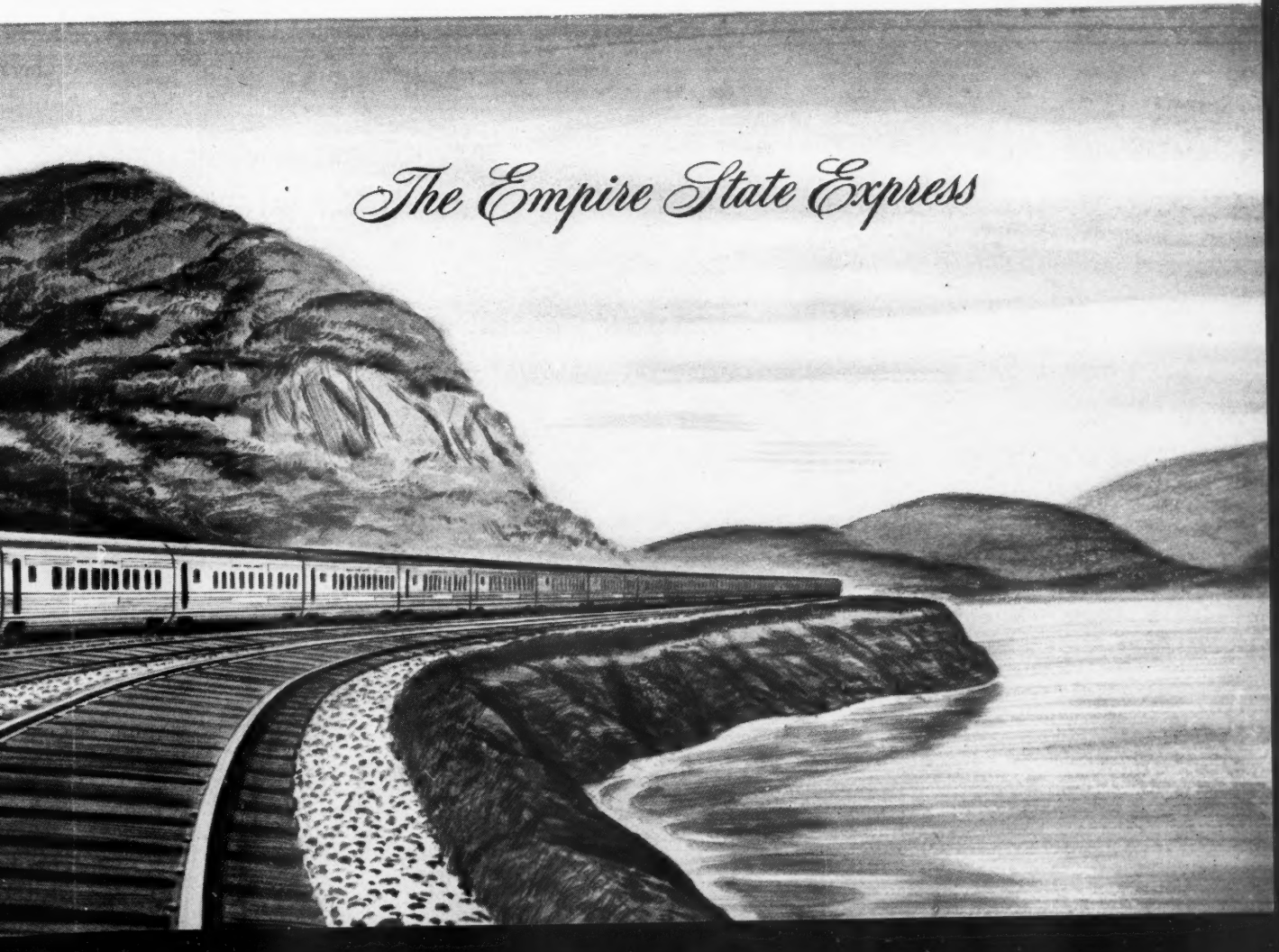

The Twentieth Century
NEW
Two of the
The New York
between New Y
Express (*below*),
—have set new stan
Both are powered
locomotives built by
5429
NEW

Two of the World's Most Famous Trains

The New York Central's 20th-Century (*above*), operating between New York and Chicago—and the Empire State Express (*below*), operating between New York and Detroit —have set new standards in speed, comfort and convenience. Both are powered by streamlined Hudson-type steam locomotives built by American Locomotive.




NEW YORK
CENTRAL
SYSTEM


The Empire State Express

HERE'S THE LOCOMOTIVE THAT PUT THE HIAWATHA ON THE MAP

—a beautiful, sleek steam engine built for The Milwaukee by American Locomotive.

THE NORTHWESTERN, on its crack trans-continental trains operating between Chicago and Omaha, also uses a streamlined Hudson-type steam locomotive built by American Locomotive.

THE MILWAUKEE uses an American Locomotive-built Hudson-type steam engine on the heavier Hiawatha trains.

Happiness Ahead!

There's a great day coming . . . if and when the war is won . . . a day when once again you'll be able to go adventuring on long motor trips, a day of greater abundance, better homes, and of hosts of new things that will make life more worth living.

It's a day worth saving for by buying as many war bonds as you can. And it's a day that may never come unless we all do buy our full share of war bonds.

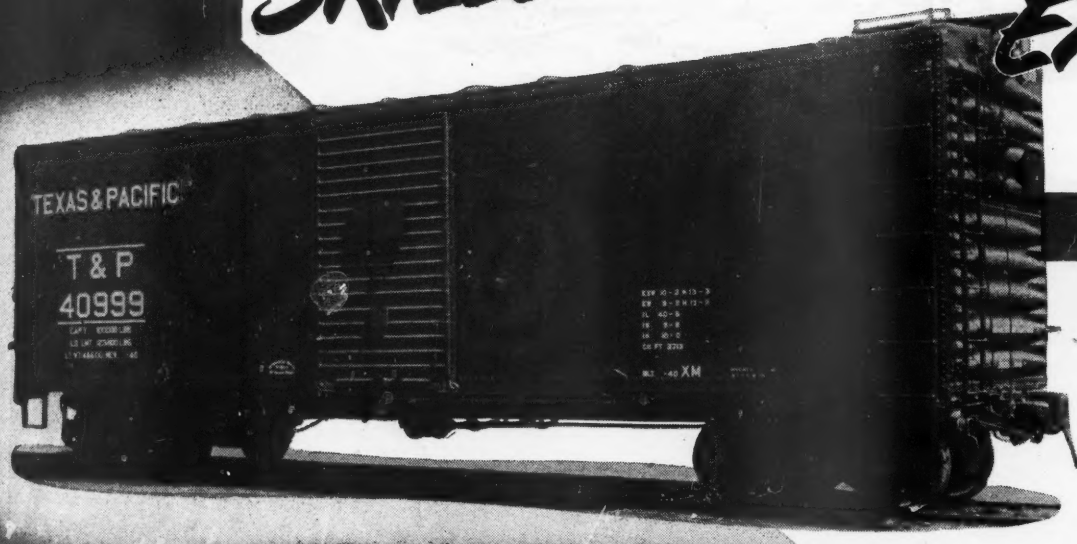
SUPPORT THE 5th WAR LOAN

Buy An Extra War Bond Today!

INLAND STEEL COMPANY

Chicago 3, Illinois

SKILLED WORKMANSHIP—EXPERT



MT. VERNON CAR DIVISION:
Complete Line of Freight Cars

LOCOMOTIVE DIVISION:
Diesel, Diesel-Electric, Electric, Steam, and Fireless Steam Locomotives.

PROCESS EQUIPMENT DIVISION:
Complete Line of Chemical, Food, and Petroleum Refinery Equipment.

QUIMBY PUMP DIVISION:
Screw, Retex, Centrifugal, Chemical Pumps.

ORDNANCE DIVISION:
Projectiles, Heavy Forgings, Breech Blocks, Winches.

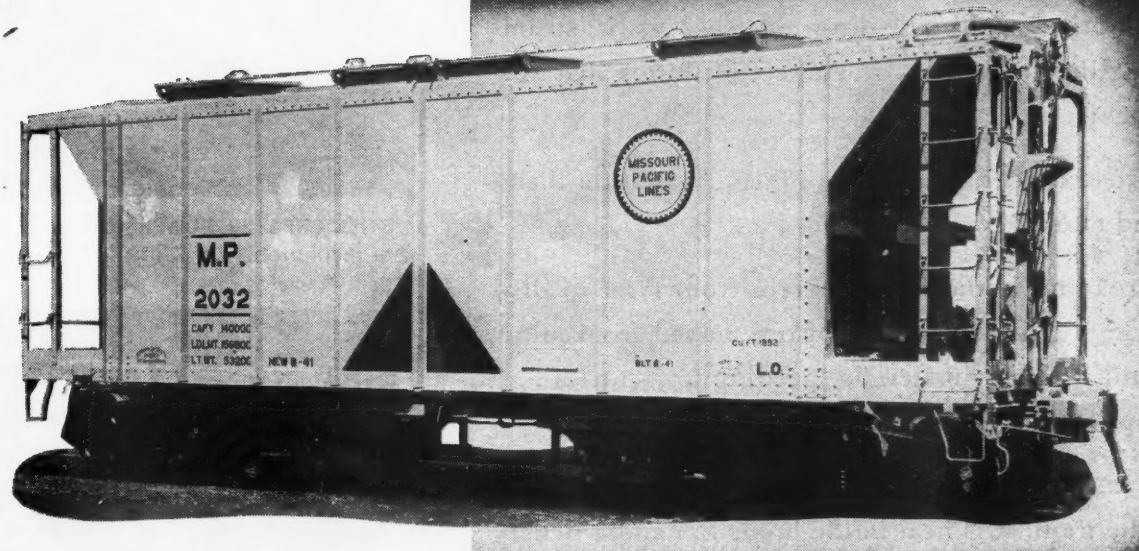
MT. VERNON

Division of **H. K. PORTER**

General Offices: PITTSBURGH 22,

Factories at Mt. Vernon, Ill. Pittsburgh, Pa.

SUPERVISION— MODERN EQUIPMENT—



..these are the factors that account for the extra measure of endurance built into

MT. VERNON CARS

CAR MFG. CO.
COMPANY, INC.
PENNSYLVANIA

Newark, N. J. New Brunswick, N. J. Blairsville, Pa.

PORTER
"Better Built" Equipment
Established 1866

ALWAYS SEARCHING

THAT'S RAILROADING!

Is it rails and rolling stock, freight cars and coaches, locomotives and signaling devices? Is it steam struggling to be free or electronic things that see in the dark?

Railroading is not any one of them. It is all of them —and more!

Railroading is the flow of grain from farm to distant city. It is a mountain of ore moved from mine to mill. It is raw materials speeding to factories . . . troops and guns and gear going to war.

It is the mother's welcoming cry as her soldier steps off the train. It is heat in the home . . . and a ticket-seller serving you at his window.

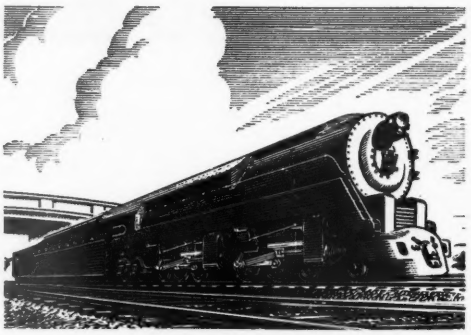
These and a thousand things . . . that's railroading!

And it sprang from the forge of the mind of man inspired by dreams. Minds that are at once creative and practical.

You see the inspiration in the ribbons of steel rail that puncture the horizon. You sense it in the swift, convenient schedules; feel it in the sure way the dispatcher clears the track.

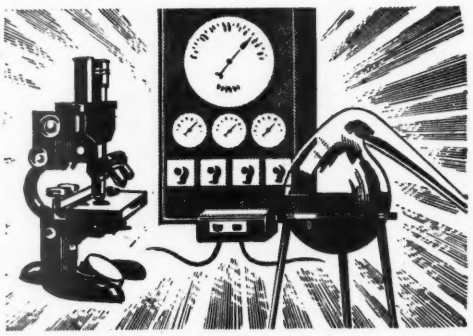
And you know that railroading is not just an invention. It is a continuing thought . . . a growing tree with roots deep in the soil of necessity and branches reaching into the light.

It can never stand still any more than the human mind can stand still. It will always be searching for new things and better ways . . . and finding them.



STILL GREATER POWER will be harnessed in revolutionary types of locomotives now being developed.

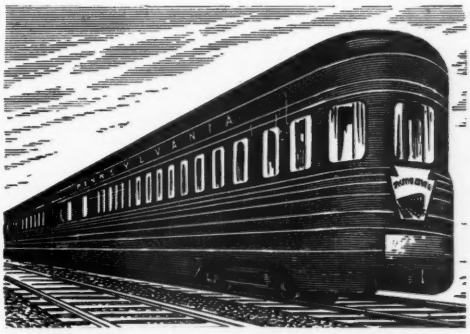
TRAIN TELEPHONES—An experimental installation is now under test on one branch of P.R.R.



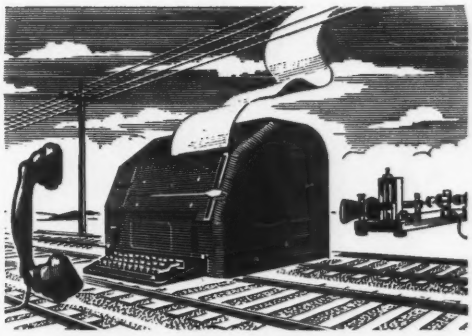
GREAT IMPROVEMENTS are born of research. P.R.R. invested almost a billion for improvements from 1929 to 1944.

BUY MORE WAR BONDS. DOUBLE WHAT YOU DID BEFORE!
5TH WAR LOAN—JUNE 12 TO JULY 8

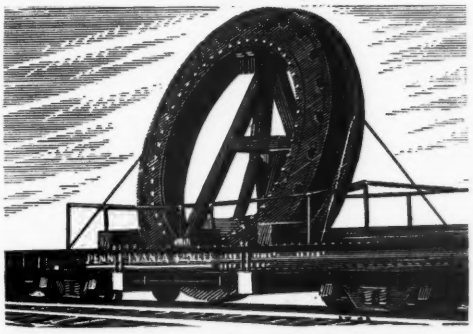
FOR NEW THINGS
and finding them...



"STREAMLINED" LUXURY is achieved by new techniques which combine comfort, light weight and great strength.



COMMUNICATION SYSTEM—P. R. R. has the largest private telephone, telegraph and teletype system in the world.



FREIGHT CARS are adapted to bigger, heavier loads through new designs and innumerable refinements.

THE MIRACLE SCIENCE—electronics reproduce roadside signals on panels inside the cabs of P.R.R. locomotives.

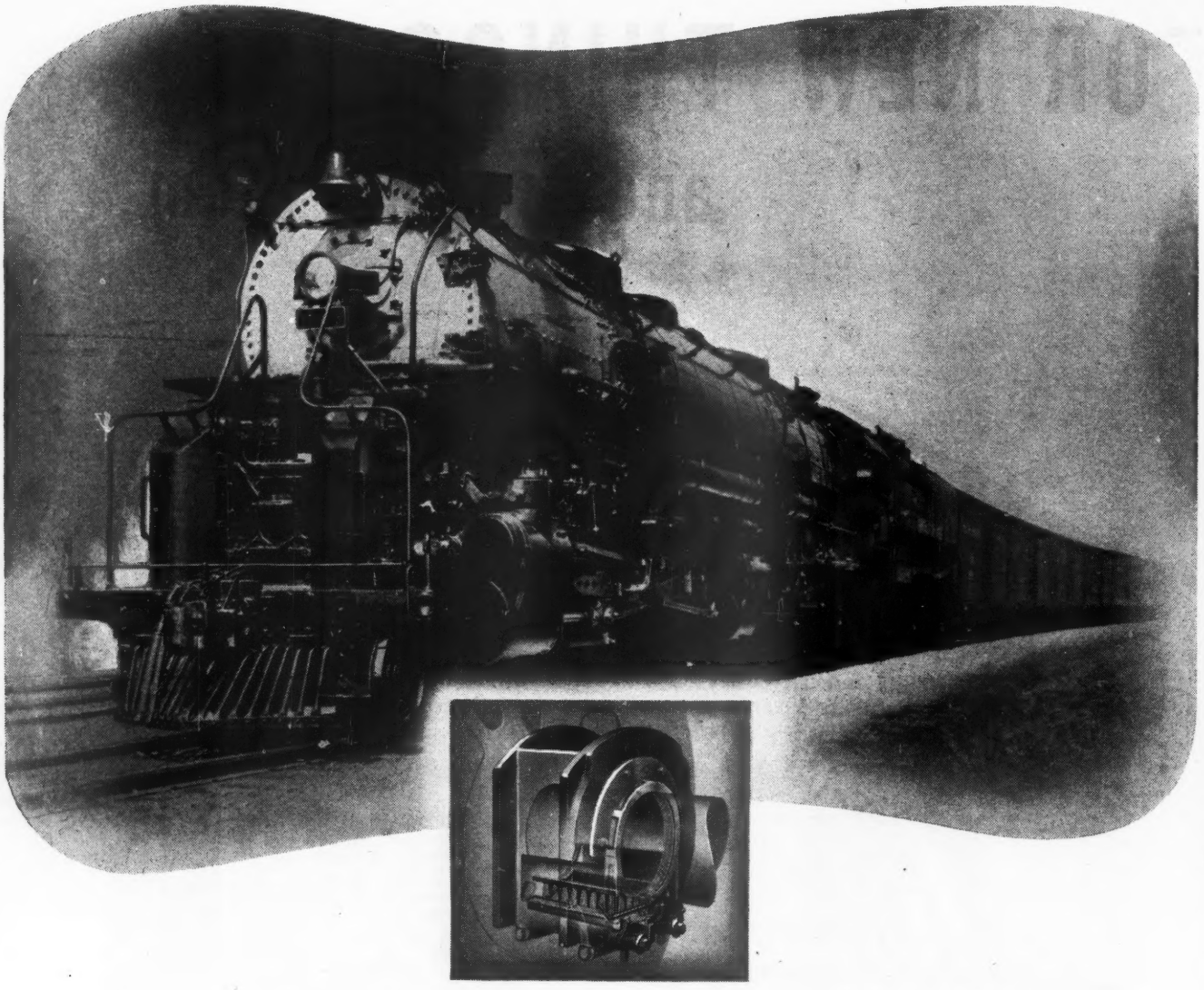
AIR CONDITIONING, now general in railroading, will become almost universal when war restrictions are lifted.

TRACK IS STRONGER, easier riding, safer; rail, roadbed, maintenance machines and practices are constantly improved.

PENNSYLVANIA RAILROAD

Serving the Nation

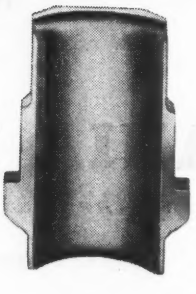
★ *47,016 in the Armed Forces* ☆ *199 have given their lives for their Country*



for modern railroading!

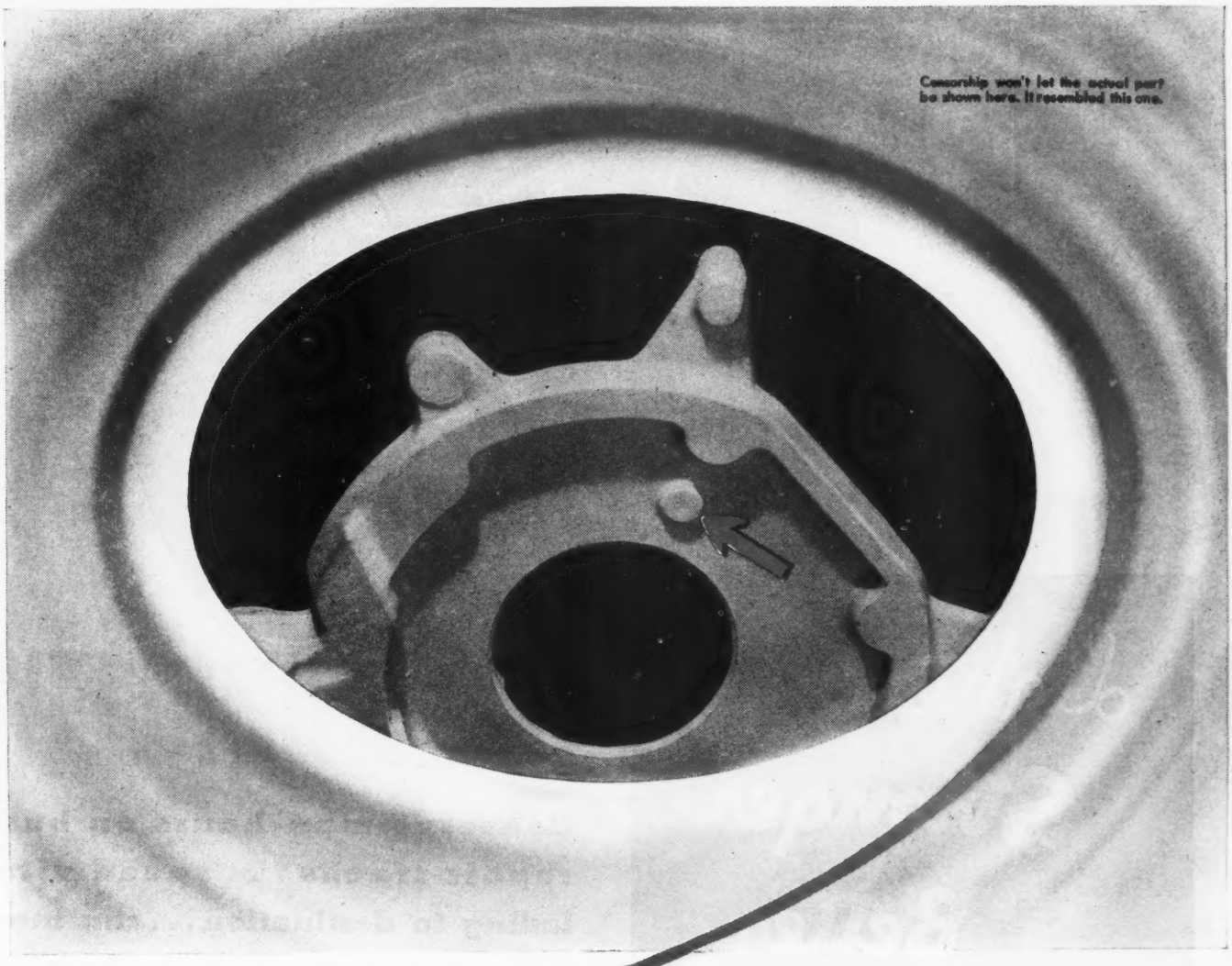
The most conclusive evidence that Magnus Bearings and Satco Bearing Metal are Modern, is their increasing adoption and continued use by American Railroads whose managements are alert to the Modern trends in equipment and appliances.

MAGNUS METAL CORPORATION
CHICAGO NEW YORK



(*above*) Magnus Journal Lubricator

(*left*) Magnus Satco-Lined Journal Bearing, Freight and Passenger-Car Type.



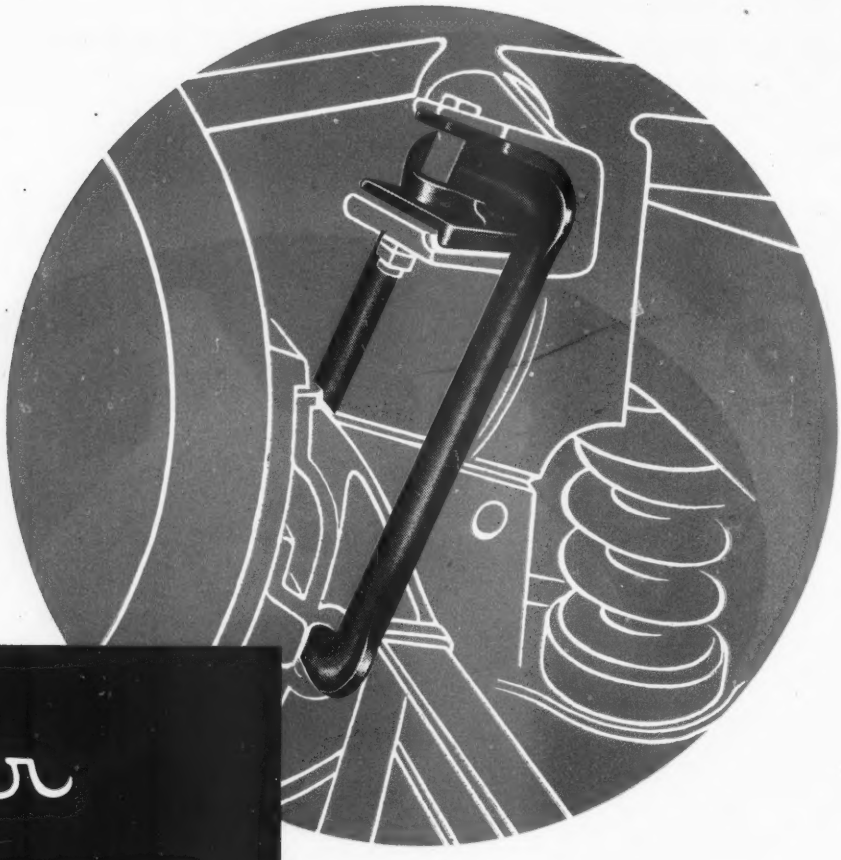
The boss was a troublemaker, until...

Examination in Alcoa's stress-analysis laboratory disclosed that the boss was a "stress concentrator". Having determined that here was the source of trouble which showed up in service, the part was redesigned. The fault was corrected.

Bosses, ribs, and the like, have a definite purpose. But when they are found to cause excessive stress concentrations, Alcoa's research men seek some way of distributing the stresses more uniformly. Our engineers may recommend a better blending of the sections, more metal here, less there. Then new parts, incorporating those suggestions, are given a stress analysis. Checked "O.K.", the piece is ready for test.

With research like this provided by Aluminum Company of America, manufacturers have been better able to get into production fast. Fighting equipment on land, in the air and on the sea is more dependable, because vital Alcoa Aluminum and magnesium parts were thus proved dependable. ALUMINUM COMPANY OF AMERICA, 2178 Gulf Building, Pittsburgh 19, Pennsylvania.

ALCOA ALCOA ALUMINUM REG. U. S. PAT. OFF. **ALUMINUM**



Lighter Stronger Better

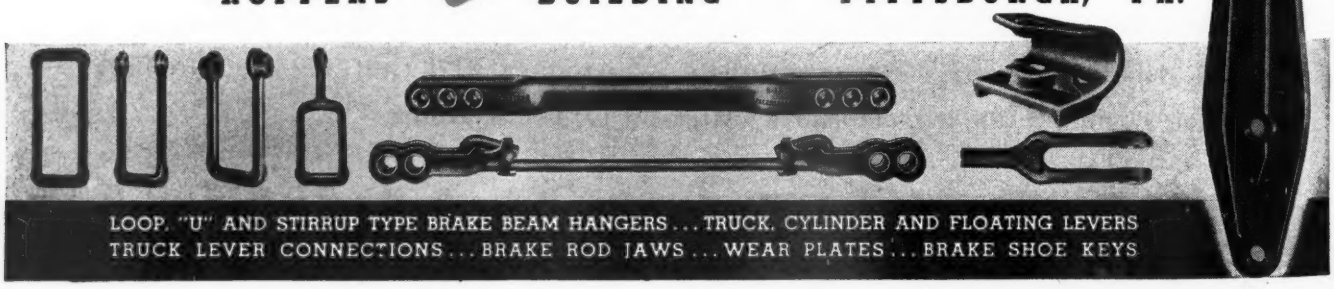
STANDARD ON MOST ROADS

Conserve man-hours on busy repair tracks . . . speed vital lading to destination . . . run more miles between car shoppings . . . by using the lighter, stronger, better Schaefer Brake Gear Appliances on all new freight cars . . . and for replacements.

Schaefer Light Weight Design Insures More Than Car Life

Schaefer EQUIPMENT COMPANY

KOPPERS BUILDING · PITTSBURGH, PA.



LOOP, "U" AND STIRRUP TYPE BRAKE BEAM HANGERS . . . TRUCK, CYLINDER AND FLOATING LEVERS
TRUCK LEVER CONNECTIONS . . . BRAKE ROD JAWS . . . WEAR PLATES . . . BRAKE SHOE KEYS

IMMEDIATE
STOCK SHIPMENTS
ON MOST TYPES

BEFORE YOU ORDER WELDING ELECTRODES . . . .

consult Westinghouse

Westinghouse is pleased to announce greatly improved deliveries on electrodes . . . immediate stock shipment on most types.

Among those immediately available is the new ACP electrode which is definitely superior for all-position a-c or d-c reverse-polarity work. While this electrode has been in production and use for considerable time, its announcement to the trade has been withheld pending the building up of present substantial stocks. (See current trade papers for formal announcement.)

Also available for shipment now is the famous DH electrode for high-speed, horizontal fillet and flat welds where high quality is essential. Likewise ready for quick delivery are standard AP (d-c) and FP (a-c or d-c) electrodes.

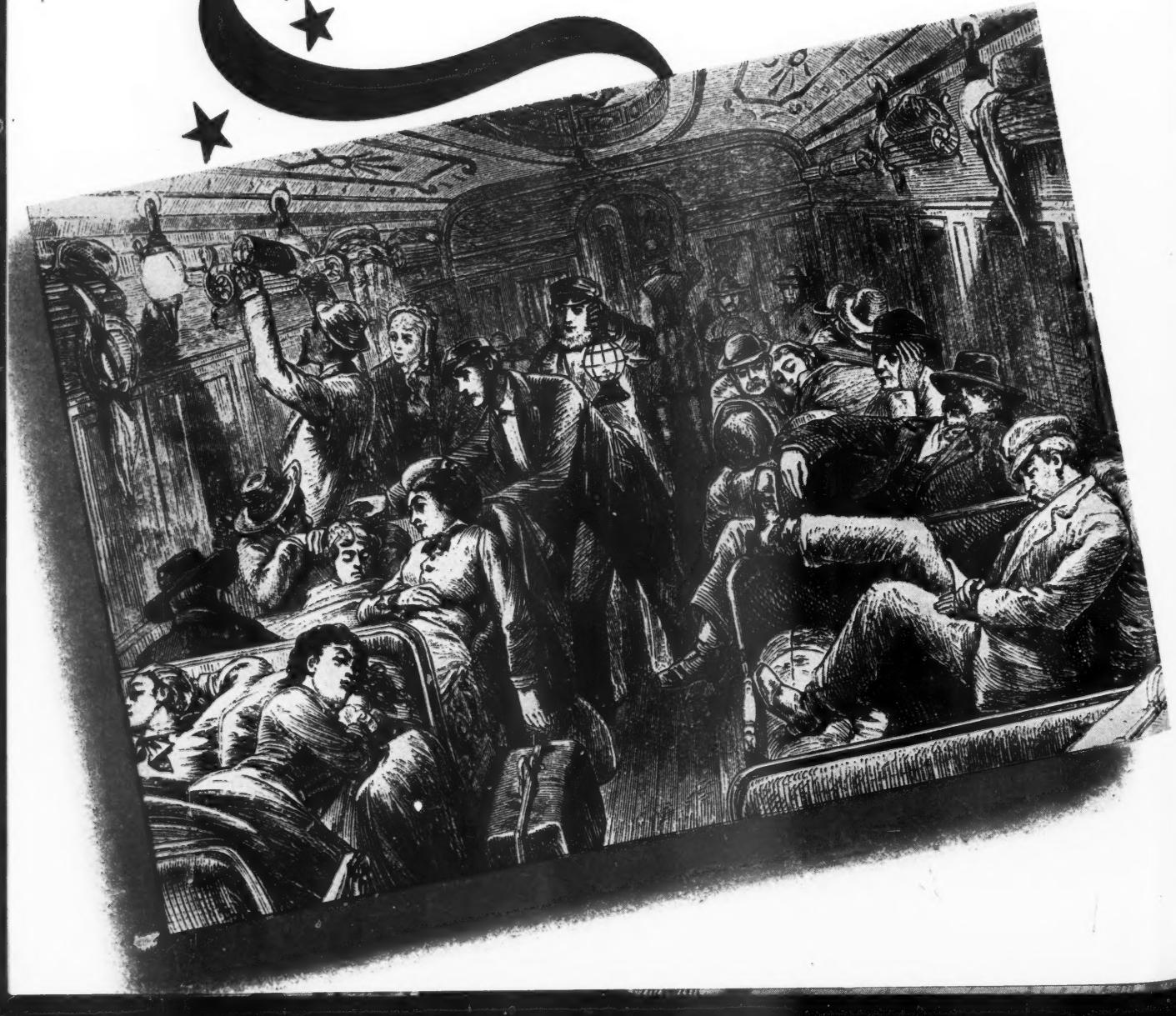
Wire or phone your nearest Westinghouse office for complete details and definite shipping data. Westinghouse Electric & Manufacturing Company, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-90536

WESTINGHOUSE PRESENTS—*JOHN CHARLES THOMAS—SUN. 2:30 E. W. T., N. B. C.—"TOP OF THE EVENING"—MON. WED. FRI. 10:15 E. W. T. BLUE NETWORK*

Westinghouse
PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

WELDERS · ELECTRODES AND ACCESSORIES

This was YESTERDAY
...What of TOMORROW?



THIS old wood engraving, showing the conductor on his nightly rounds in '82, bears a striking resemblance to some travel scenes of today. But, even if the passengers' positions seem familiar, one glance at the car, itself, shows changes a-plenty. For our railroads have constantly sought out each new advance in the design and equipment of their rolling stock that could contribute to the safety, comfort, and enjoyment of their passengers.

☆ ☆ ☆ ☆ ☆

RAPID as these advances have been in the past, at war's end they promise to rush upon us even faster. For greater ease of riding, new trucks are being developed, as well as far more comfortable seats with luxurious, deep upholstery, and — for over-night service — reclining backs.

Vastly improved lighting will be glareless, and each individual will have sufficient light at the reading plane to enable him to read for as long as he pleases without eye strain.

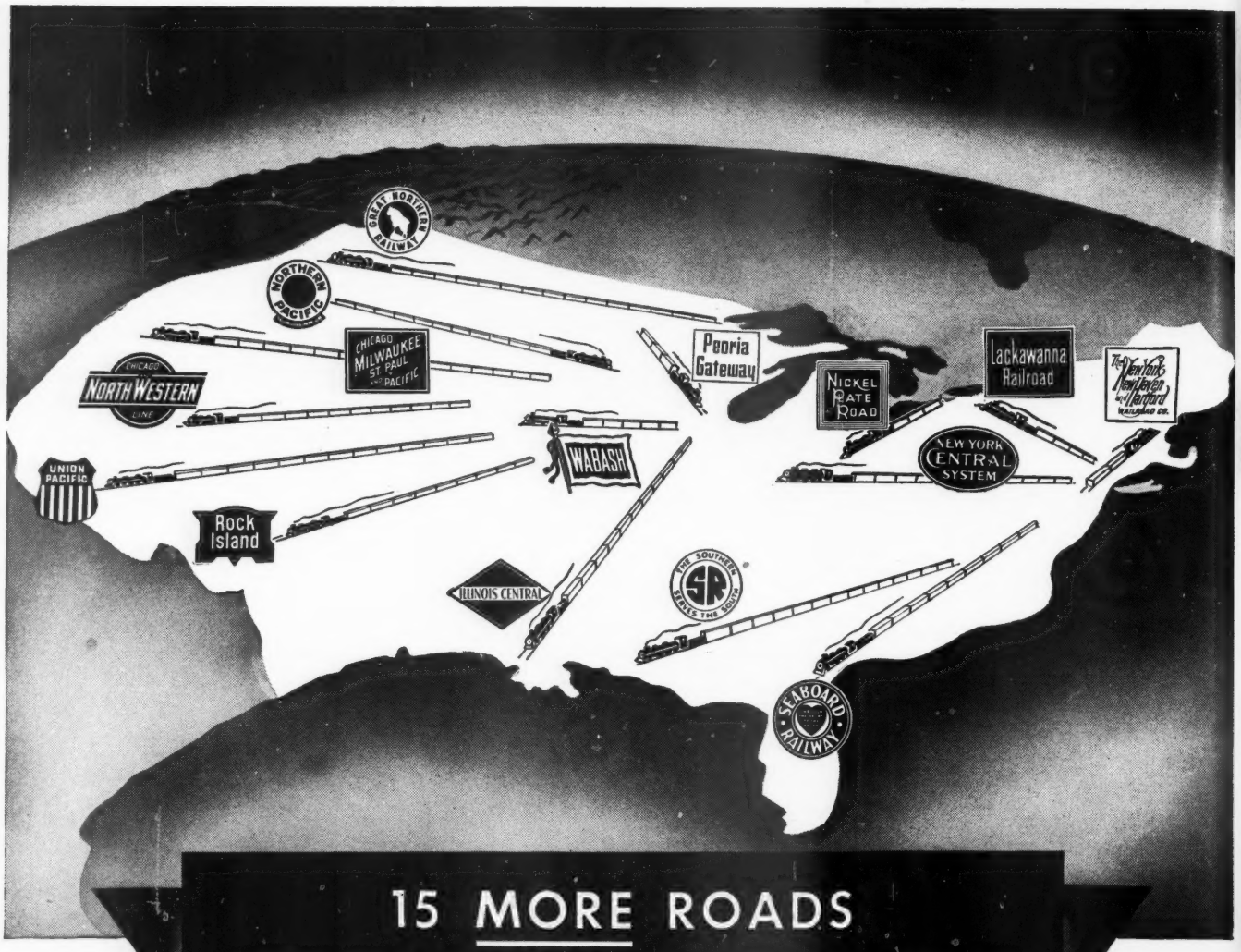
Completely automatic air-conditioning, affording the correct temperature and proper relative humidity for body comfort under all conditions of outside weather, has been developed and is already in use on a few cars.

These are but some of the many advances which A.C.F. has already incorporated in its planning for post-war passenger equipment — *passenger equipment designed to make the railroad the preferred means of mass transport.*

a.c.f.

AMERICAN CAR AND FOUNDRY COMPANY

New York • Chicago • St. Louis • Cleveland • Washington • Philadelphia • Pittsburgh • St. Paul • San Francisco



15 MORE ROADS ARE SAVING WEIGHT WITH PLYWOOD

13,000 new box cars and reefers are now plywood-sheathed for more payload tons

Fifteen more Class I roads are rebuilding rolling stock with weight-saving plywood!

And the list reads like a blue book of American railroads.

Great Northern, Northern Pacific, Union Pacific, New York, New Haven and Hartford and many other Class I carriers are figuring on new highs in ton miles with 13,000 new plywood-sheathed box cars and reefers.

Railroad operators have proved for themselves that plywood saves weight! That plywood saves construction time and money! That plywood adds tons of paying freight!

Resilient Douglas Fir Plywood has demonstrated under war-time stress that pound for pound, *it's stronger than steel.*

So when you rebuild, figure on plywood for lower operating ratios.

You'll find a complete assortment of railroad quality plywoods under the Weldwood trademark . . . including Douglas Fir, California Pine, fine hardwoods, metal-covered plywood (Armorply*) and Flexwood*.

For freight cars and reefers . . . baggage cars and coaches . . . Pullmans and de luxe club cars . . . you'll always find the right answer in a Weldwood product.

Made by the world's largest producers of plywood, Weldwood Plywood is speedily supplied by 16 distributing units conveniently located from coast to coast.

For full information write or phone today.

*Reg. U.S. Pat. Off.

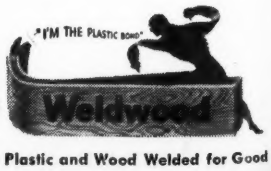
WELDWOOD Plywood

Weldwood Plywood and Plywood Products are manufactured and marketed by

UNITED STATES PLYWOOD CORPORATION, New York, N. Y.

Distributing units in Boston, Brooklyn, Chicago, Cincinnati, Cleveland, Detroit, High Point, Los Angeles, Louisville, Newark, New York, Oakland, Philadelphia, Rochester, San Francisco, Seattle . . . Send inquiries to nearest point.

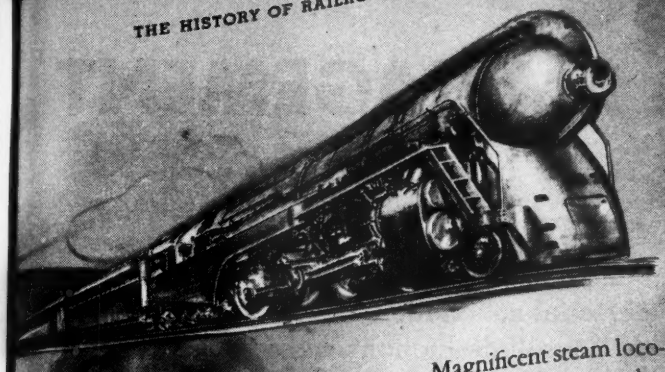
Waterproof Weldwood, so marked, is bonded with phenol formaldehyde synthetic resin. Other types of water-resistant Weldwood are manufactured with extended urea resins and other approved bonding agents. Back of these Weldwood Products are unmatched facilities and experience in Plywood production and fabrication.

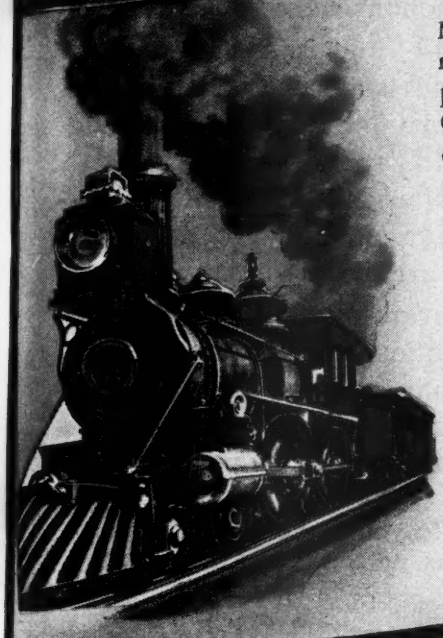


Plastic and Wood Welded for Good

INTERDEPENDENT DEVELOPMENT
a Continuing Story

THE HISTORY OF RAILROADING





Magnificent steam locomotives, of the type that power the Twentieth Century Limited and other high-speed luxury trains on American railroads, are products of a long evolution of continuous improvement. In the early 1880's locomotives of the type here illustrated pulled the trains that built America into a mighty, commercial empire. Now, they look small and antiquated in comparison.

THE STORY OF COAL

Coal mining exhibits a progressive development in magnitude and efficiency. The contrast between the small, old-time collieries, with mule-drawn mine cars, and the big, modern, efficient, mechanized mines, such as those operated by The M. A. Hanna Company and affiliated companies, with sleek, powerful, speedy electric mine locomotives, is as striking as that shown in railway equipment.

COAL . . . FIRST IN RAILROAD TONNAGE AND . . . FIRST IN RAILROAD REVENUE

● In 1942 Bituminous Coal (379,309,494 tons) and Anthracite Coal (69,349,941 tons) originated as revenue freight on railways of the United States. This accounted for 8,062,876 originating carloads, or nearly 25% of the total carload traffic of all the nation's railways. No other single product classification approaches this percentage.

Coal, as represented by this company and its producing and distributing affiliates, acknowledges its debt to the American Railroads; believing that, in turn, the railroads recognize the destiny that makes the two inseparable in a common progress and prosperity.

THE HANNA CO

The M. A. Hanna Company

★ 1300 LEADER BUILDING • CLEVELAND 14, OHIO ★

Sound the Alert!

MANAGEMENT
LABOR

—for the 5th War Loan drive during June and July. The need for the 5th War Loan is immediate, crucial. For impending events may make the 5th the supreme financial effort of the war.

The U. S. Treasury has set the overall goal at $16,000,000,000 — $6,000,000,000 from individuals alone. This is the biggest sum ever asked of the American people—*and it must be raised.*

That's why the U. S. Treasury asks Management and Labor to sit down together and organize—NOW!

For organization—good organization—has been responsible for the excellent showing of the payroll market. And its most important single superiority has been personal solicitation—desk to desk, bench to bench, machine to machine personal solicitation. 71% of all persons on payroll deductions were solicited for the 4th War Loan.

Now, to personal solicitation, add the sales incentive of a definitely established plant quota. Build your campaign around a quota plan. Set up departmental goals. Stress percentage of participation figures. Stimulate group enthusiasm.

In planning your quota campaign, work in close cooperation with the Chairman of your War Finance Committee. Everything is set to make the 5th War Loan drive a huge success—with your help!

(Note: You've read this message. If it doesn't apply to you please see that it reaches the *one* person who can put it in action!)

Here's the Quota Plan:

1. Plant quotas are to be established on the basis of an *average* $100 *cash* (not maturity value) purchase per employee.
2. Regular Payroll Savings deductions made during the drive accounting period will be credited toward the plant quota.
3. 90% of the employees are expected to contribute toward raising the cash quota by buying extra 5th War Loan Bonds: 1—Outright by cash. 2—By extra installment deductions. 3—By extra installment deductions plus cash.

Example: **JOHN DOE Mfg. Co.** — 1,000 Employees

1,000 employees x $100 Regular Payroll deductions during the eight weekly payroll Accounting Periods of June and July = $100,000 Cash Quota

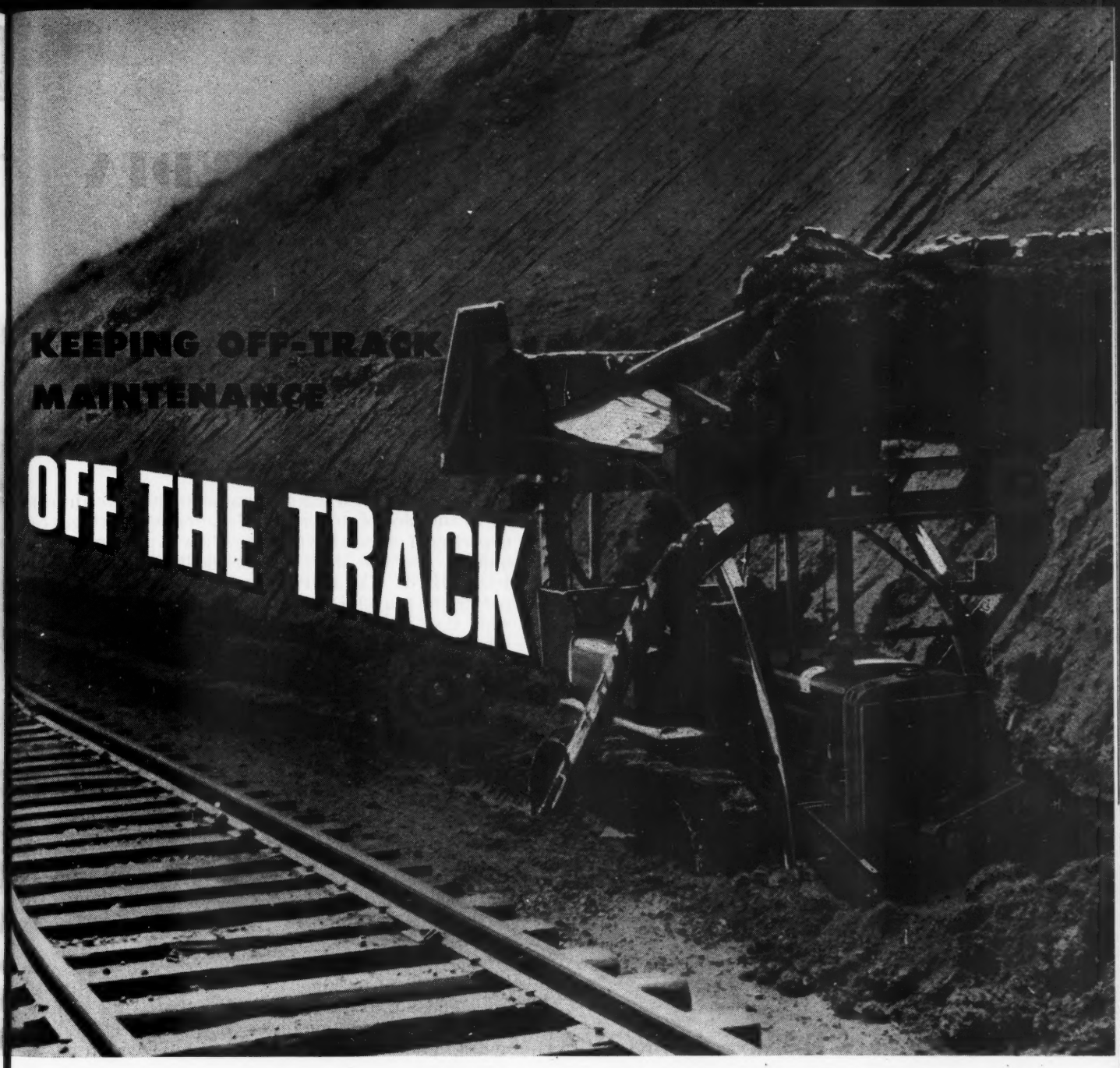
30,000
$70,000 (to be raised by sales of extra Bonds to at least 900 employees)

ORGANIZE • SOLICIT • DELIVER

The Treasury Department acknowledges with appreciation the publication of this message by

RAILWAY AGE

★ ★ *This is an official U. S. Treasury advertisement—prepared under the auspices of Treasury Department and War Advertising Council.* ★ ★



• *In the wake of heavy rains, this "Caterpillar" Diesel D4 Tractor, equipped with a 1¼-yard Athey Mobiloader, slugs its way through heavy mud to clean out a ditch on the Denver & Rio Grande Western.*

FOR some kinds of track maintenance, the work train is indispensable. But work trains do tie up main lines, do have to move to passing tracks when other trains approach, do lose much productive time when traffic is as heavy as it is today.

"Caterpillar" Diesel equipment overcomes all these problems. "Caterpillar" Diesel Tractors are rugged and powerful enough to handle the toughest jobs of grading, ditching, filling, widening cuts, riprapping and ploughing snow. Yet they operate entirely independent of train movements . . . need no sidetracking . . . and, at the most, stop work only long enough to allow a train to pass.

Compared to other MW methods, "Caterpillar" Diesel economy is outstanding. Each unit requires but a single operator. It can often accomplish in a day as much as an entire work train. And it works with maximum efficiency on small quantities of low-cost fuel.

In licking the biggest railroad job in history, lines which are fortunate enough to own "Caterpillar" Diesels have discovered some dramatic facts about the ability of these husky machines to handle off-track maintenance work. "Caterpillar" will be glad to pass on their findings to MW men who are interested. Just write your request on a postal today.

CATERPILLAR TRACTOR CO. • PEORIA, ILLINOIS

CATERPILLAR DIESEL

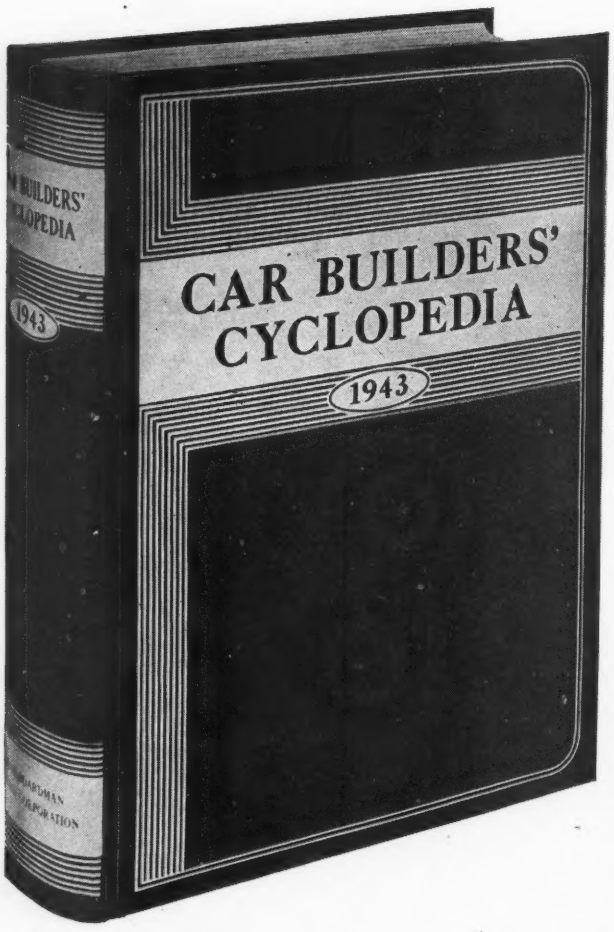
REG. U.S. PAT. OFF.

TO WIN THE WAR: WORK—FIGHT—BUY MORE WAR BONDS!

Car Department Officers Need the New

CAR BUILDERS' CYCLOPEDIA

of American Practice



Editor, ROY V. WRIGHT
Editor of Railway Mechanical Engineer

Managing Editor, ROBERT C. AUGUR
Associate Editor of Railway Mechanical Engineer

IN these days of wartime demand for more freight cars in the face of material and manpower shortages car department officers have to know how to get repair parts quickly and use short cut methods. The new CAR BUILDERS' CYCLOPEDIA is playing an important part in the war effort by helping these busy key men find what they want. In its indexes they quickly locate the information they need to carry out rush jobs and get "bad order" cars back on the line.

If the car department officer wants to find out something about the A.A.R. emergency composit freight car or the new triple-deck troop sleeper he can turn to detailed drawings and photog.aphs with complete supporting data. If he wishes to know what is being done with plywood and other new materials used to replace metal in freight car construction he can quickly locate it in this new edition. The 50-page Car Shop Section shows latest machine tools and flow charts of how maintenance work is handled in large, medium and small model car shops.

The 1,300 pages with their 3,000 scale drawings and photographs of all kinds of cars and their parts make a nine-pound, 9x12x3-inch volume that is the equivalent of a small working library on the subject. Edited under the auspices of the Mechanical Division of the Association of American Railroads, it contains many of the Mechanical Divisions' specifications and recommended practices. Equipment manufacturers give detailed and illustrated information on their lines of supplies and shop machinery.

Twenty Big Sections

Dictionary of Car Terms—Freight Train Cars—Freight Car Construction—Railway Service Cars—Passenger Train Cars—Motor Cars and Trains—Passenger Car Construction and Equipment—Lighting and Electric Power Equipment—Air Conditioning, Heating and Ventilating—Couplers; Draft Gears; Buffers—Air Brakes—Brake Gear—Safety Appliances—Car Trucks—Journal Boxes; Roller Bearings; Lubrication—Industrial and Mine Cars—Export Cars—Car Materials and Supplies—Operation; Interchange; Loading—Car Shops and Car Maintenance—Indexes.

1943. 16th Edition. 1,300 pages; 3,000 illustrations, 9x12, Fabrikoid, $5.00

SENT ON TEN DAYS' APPROVAL

CAR BUILDERS' CYCLOPEDIA

Free Examination Coupon

Simmons-Boardman Publishing Corp.
30 Church Street, New York 7, N. Y.

Send me a copy of the 16th edition of the CAR BUILDERS' CYCLOPEDIA on 10 days' approval. If not entirely satisfied I will mail it back. Otherwise I will remit the list price of $5.00.

Name.....

Address.....

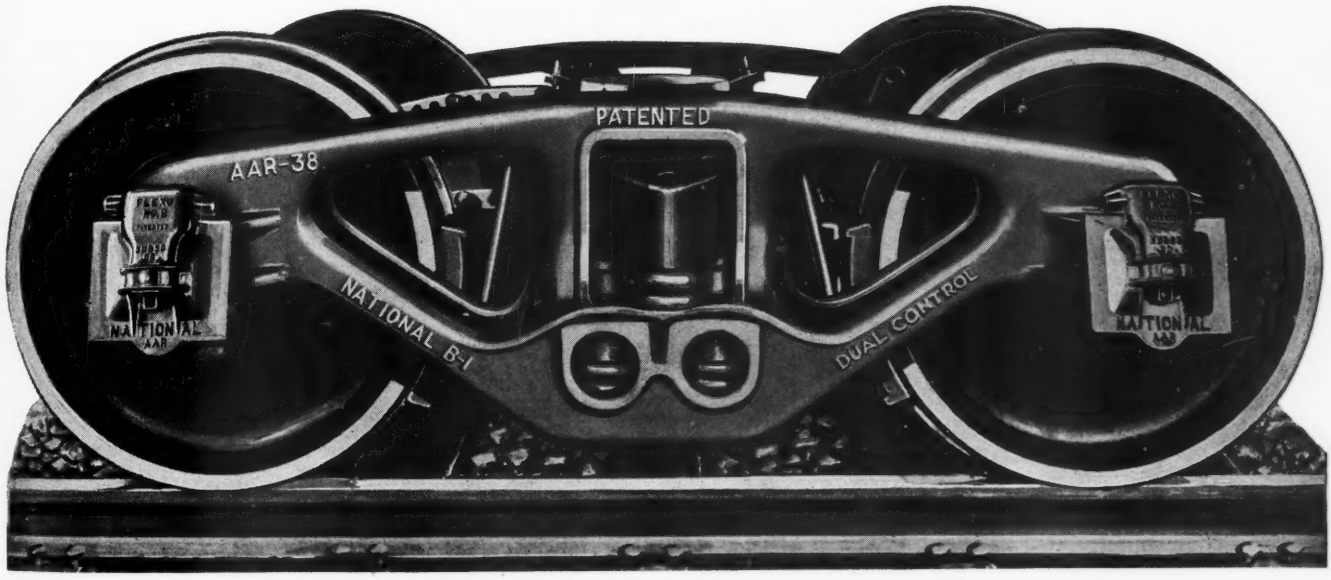
City.....State.....

Position.....Company.....

R.A. 6-24-44

Built in Controls make B-1 an Easier Riding Truck

National B-1 Trucks with Dual Control are protecting cars and lading throughout the United States and Canada. Built-in controls and safety features allow cars with B-1 Trucks to be speeded up with safety.



National B-1 Truck with Dual Control

"Spring bounce" controlled . . . Self squaring
Springs protected . . . Quickest Wheel Change
No Spring Plank . . . No Spring Plates required
Less number of parts . . . Lower Maintenance Cost

NATIONAL MALLEABLE AND STEEL CASTINGS CO
General Offices: CLEVELAND, OHIO
Sales Offices: New York, Philadelphia, Chicago, St. Louis, San Francisco
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ON THE ROCK ISLAND

4 Alco-G.E. Diesel-electrics

How Alco-G.E. Diesel-electrics Have Been Winning the Rock Island's Endorsement

1938 — First 1000-hp Alco-G.E. switcher placed in service

1940 — Three 2000-hp road locomotives placed in service on famous "Rockets"

1941 — Another 2000-hp road locomotive and the first four 1000-hp road switchers. In 1942, these road switchers were released to the U.S. government for overseas duty

1942 — Four more 1000-hp switchers

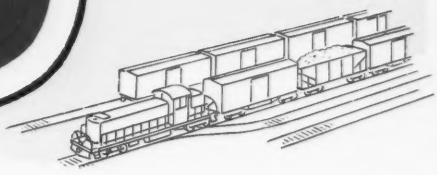
1943 — Six more 1000-hp road switchers

1944 (As of March 1) — Another five 1000-hp road switchers

Alco GE

AMERICAN LOCOMOTIVE

cs Release 7 Steamers



Alco-G.E. road switchers, available 97 per cent of the time, slash motive-power requirements and speed up freight schedules; also reduce engine-house expense.

ON two Rock Island operations—totaling 525 miles—four 1000-hp Alco-G.E. units are handling the entire motive-power job: switching, accumulating trains, and hauling them on the road.

One result of this versatility has been the release of seven steamers for other work and the elimination of the cost of maintaining servicing stations for them. One terminal, on each operation, adequately cares for all the fueling, inspection, and maintenance needs of the diesel-electrics.

Because they are designed for combination road and switching service, the Rock Island makes full-time use of their 97 per-cent availability. On road trips, these 1000-hp diesel-electrics haul 1350-ton trains up long, curving grades of more than one per cent. Between road trips they are kept busy on switching jobs. At both types of work they are making such effective savings in time that freight schedules have been speeded up—despite an increase in traffic.

The substantial savings produced by the Alco-G.E. diesel-electrics on the Rock Island indicate how effectively you can use them to speed present war traffic and at the same time lower your operating cost to meet future competition.

Our engineers will be glad to survey your system and give you the benefits of our combined total of more than 150 years of railroad experience. And because we build all three types of motive power—diesel-electric, electric, and steam—we can impartially recommend the one which is economically best suited to your particular needs.

These Features Adapt Alco-G.E. Diesel-electrics Particularly to Road and Switching Service

ECTRIC D IVE can use all engine wer for tr ion at any speed

EXCELLENT VISIBILITY from cab for fast, accurate, and safe switching

SWING-BOLSTER TRUCKS and 40-foot truck centers for a smooth ride

TRAIN-HEATING FACILITIES for comfortable passenger service

E nd GENERAL ELECTRIC

113-85-9580

● *Built by The American Locomotive Co. for Union Pacific.*

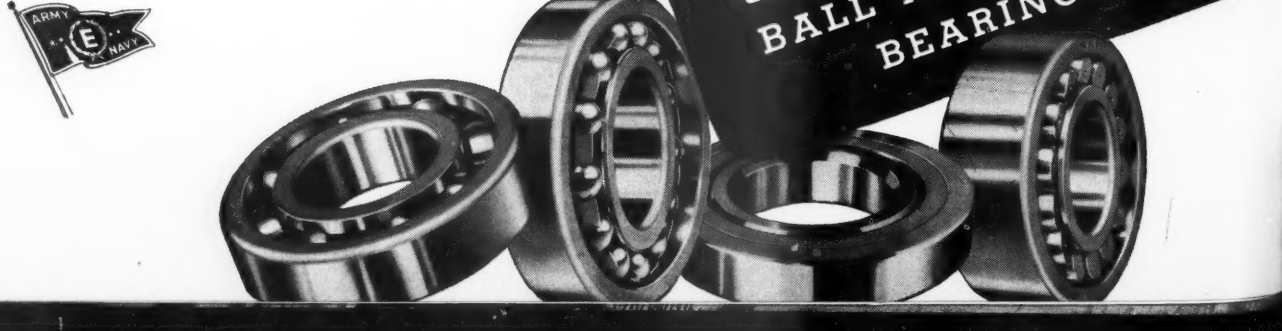
"Materials Move!"

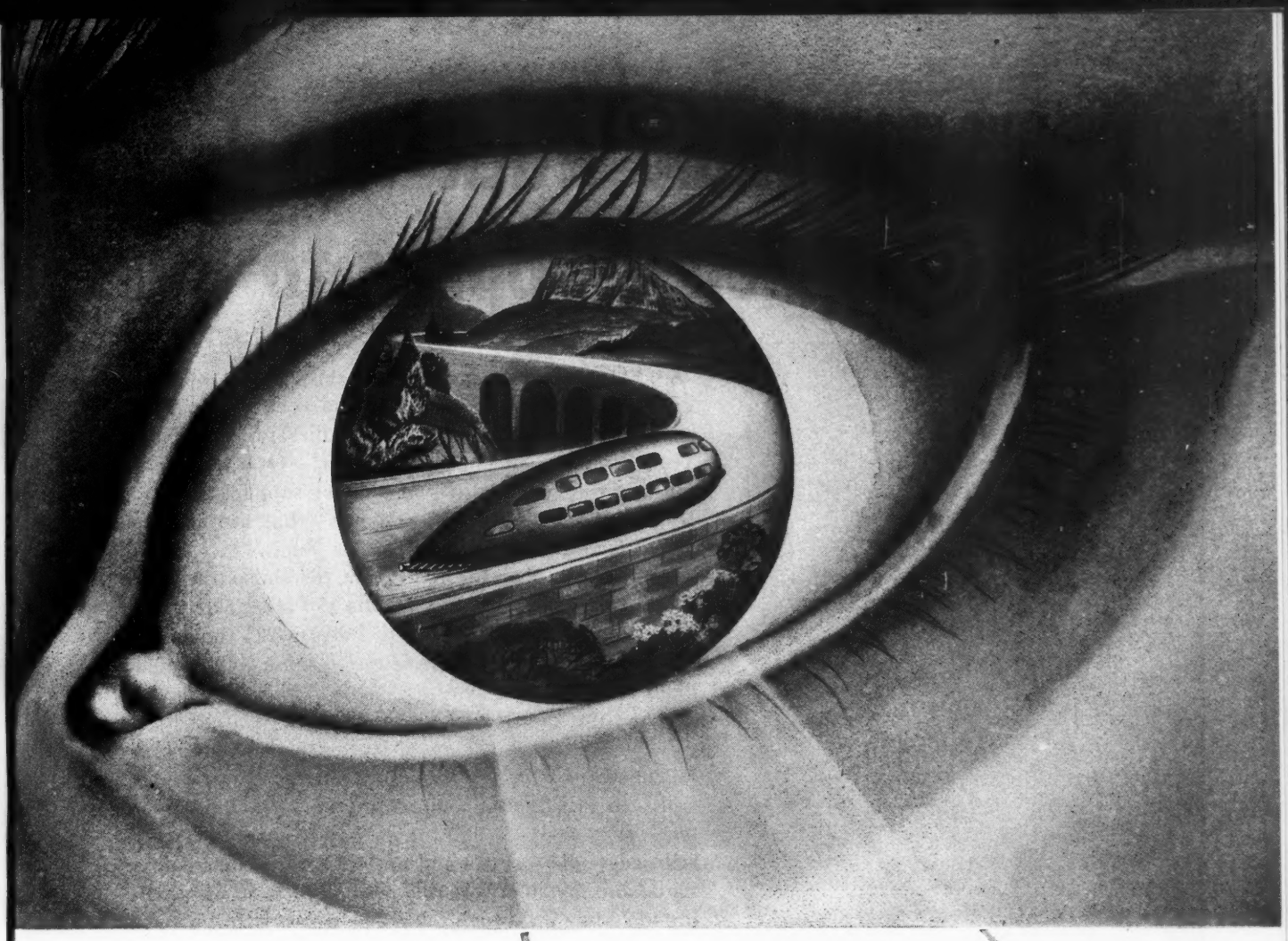
The use of roller bearings on freight locomotives assures greater availability of equipment.

How important this is to the War Effort is demonstrated by the good performance of SKF-equipped freight locomotives built by The American Locomotive Company for the Union Pacific.

The way in which vital war materials are moving over the Union Pacific is a tribute to the dependability of SKF Spherical Roller Bearings. 5520

SKF INDUSTRIES, INC., PHILADELPHIA 34, PA.





Tears for "The Teardrop"?

"How much fact and how much fancy is there in transportation designs that have been so widely publicized! Are they technically right, economically sound? Will common carriers follow, modify or reject these designs?"

Pertinent questions — and questions that bear directly upon suppliers like ourselves!

Here's our answer. Come what may, we'll be ready to supply the *right* sash. Added to the know-how of fifty years, is what we are learning, under wartime stress, about new alloys, improved lightweight design, stepped-up performance. Edwards will be *ready*. We have continued to devote all our facilities to Sash for vital military and civilian transport.

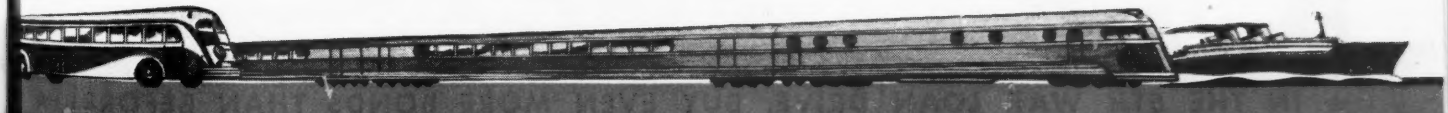
194V transportation designs will find 194V Sash — Edwards Sash — ready!

The O. M. Edwards Co., Inc., Syracuse, N. Y.

EDWARDS SASH

IN ESSENTIAL WAR SERVICE AS IN PEACE

THE EYES OF TRANSPORTATION



H FOR EVERY TYPE OF TRANSPORTATION — ON LAND, ON THE SEAS, IN THE AIR

On the "single track wonder," TELETYPE speeds supplies to Russia

ACROSS the blazing desert and through the towering mountain passes of Iran winds one of the least known but most important of the Allies' railroads—the Trans-Iranian "single track wonder!" Over it speeds much of the vast quantity of military supplies going to Russia; the tanks, trucks and guns that are spelling defeat for the Nazis on the Eastern Front.

Built by the Shah before the war, this single track line is a marvel of engineering. It cuts 150 miles across the desert to the mountains, climbs through 225 tunnels to a *7200 foot pass*, and then drops *below sea level* to Bandar Shah on the Caspian Sea.

When the Transportation Corps' U. S. Military Railway Service took over operation of the railroad from Persian Gulf ports at Teheran, there were few sidings and switching yards and almost no communications facilities. Among the first things these experienced Army railroaders did was to build new sidings and marshaling yards and install a workable method of train dispatching including a through telephone network and a complete Teletype communications system. By Teletype go the consists and myriad other messages that help this vital rail link move more than 175,000 tons of war shipments each month.

In Iran, Italy, England, Alaska and Australia, Teletype is used by every branch of the armed forces to *get the message through!* TELETYPE CORPORATION, Chicago, Illinois.

TELETYPE
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Western Electric Company
INCORPORATED

ARMY (E) NAVY

★ IN THE 5TH WAR LOAN DRIVE, BUY EVEN MORE BONDS THAN BEFORE! ★

"ELECTRIFICATION KEEPS 'EM ROLLING DOWN TO ROANOKE"...

reports THE VIRGINIAN RAILWAY COMPANY

Motive power units on THE VIRGINIAN LINE are among the most powerful locomotives in the world, consisting of three semi-permanently coupled units 152 ft. in length. These locomotives weigh 637.5 tons.

OVER 134 ROUTE MILES OF HEAVY GRADE

Power-fed by

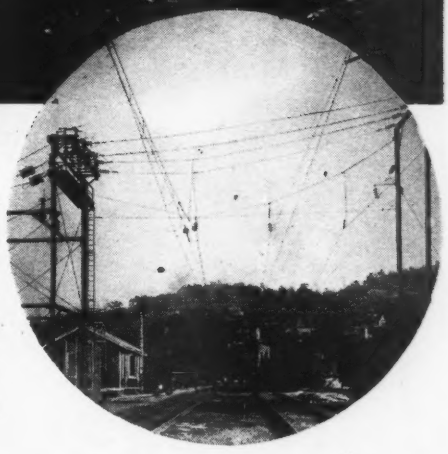
PHONO-ELECTRIC* BRONZE WIRE

To open a bottleneck on their main line, The Virginian Railway Company in 1923 electrified a critical 134-mile section between Mullens, West Virginia and Roanoke, Virginia.

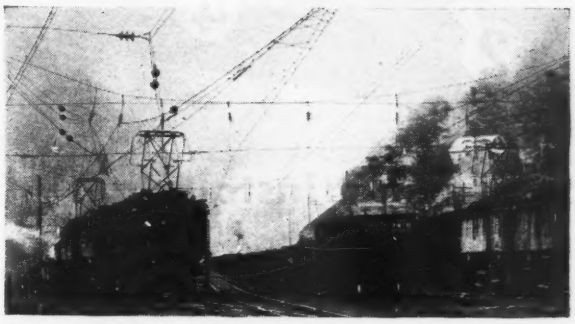
In 1943, over 19,301,760 tons of vital-to-victory material moved over that electrified section en route to Hampton Roads. And a twenty-year experience record has proved beyond question that the initial electrification investment has more than justified itself, in terms of increased truck capacity, the ability to move heavier trains at greater speeds, and lower operating costs.

Along with others in the growing company of important electrified lines, The Virginian Railway uses Bridgeport's PHONO-ELECTRIC BRONZE WIRE for catenary and span. The exceptional performance records of electrified systems becomes important reading today for those whose business it is to plan for effective new electrification and rehabilitation after V-day. Write for the 80-page technical booklet "PHONO-ELECTRIC BRONZE WIRE"... or ask for a Bridgeport engineer to sit in with you on the planning of dependable overhead equipment.

**trade name*



To provide for the application of increased power with the growth of traffic on THE VIRGINIAN LINE, transformer station Phono-Electric catenary and locomotives were designed for either 11,000 or 22,000 volts between trolley and rail.



THE VIRGINIAN RAILWAY's East End Elmore yard, in West Virginia. Much of the coal tonnage moved on THE VIRGINIAN LINE is picked up at this point for movement to tidewater at Norfolk. Heavy grades reaching a maximum of 2% occur between Elmore and Roanoke, with curvatures reaching a maximum of 12°.

BRIDGEPORT BRASS

Phono-Electric Bronze

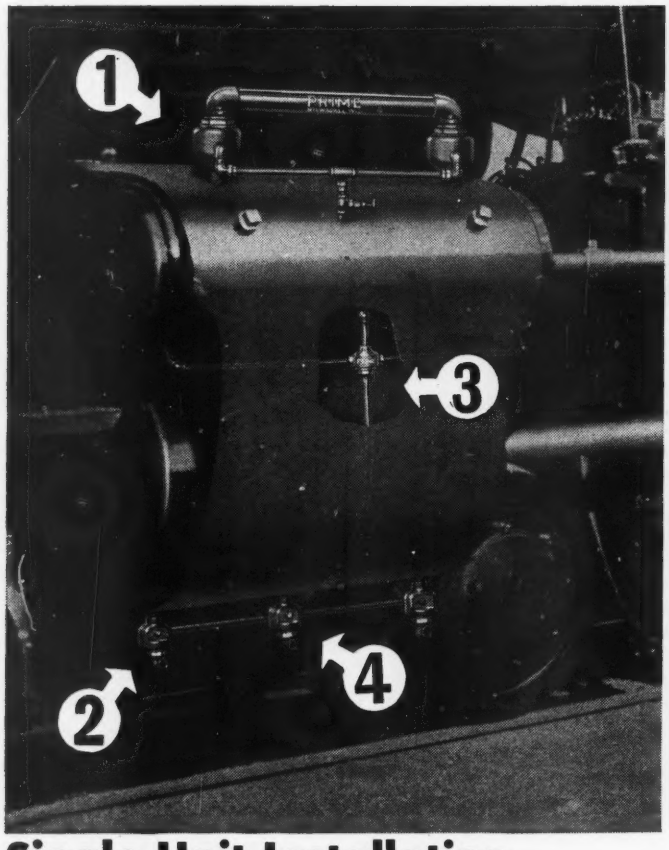
A PRODUCT OF

BRIDGEPORT BRASS COMPANY

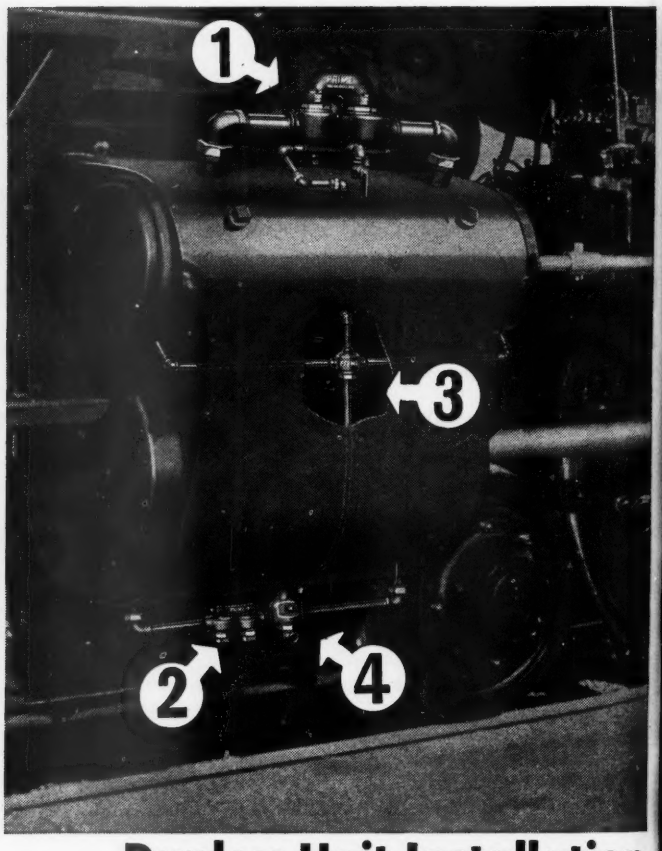
BRIDGEPORT 2, CONNECTICUT · ESTABLISHED 1865

COMPLETE PROTECTION AND DRAINAGE OF LOCOMOTIVE CYLINDERS

by PRIME



Single Unit Installation



Duplex Unit Installation

1 PRIME AUTOMATIC CYLINDER PROTECTION VALVE

. . . saves fuel, water and maintenance . . . protects cylinder against damaging pressures.

2 PRIME AUTOMATIC CYLINDER COCK

. . . the original steam-operated automatic cylinder cock . . . automatically drains and relieves dangerous overpressures in cylinder.

3 PRIME AUTOMATIC EXHAUST CHANNEL DRAIN VALVE

. . . works automatically, drains cylinder exhaust cavities. Circulation of live steam keeps valve and pipes clean.

4 PRIME LIVE STEAM CHANNEL DRAIN VALVE

. . . completely automatic . . . drains all condensate from steam chest. Keeps water out of cylinder; preserves lubricating film.

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For the Longer Runs and Higher Speeds of Today and Tomorrow

More and more Railroads are recognizing the necessity for peak Locomotive utilization and faster service. Longer Train runs with a minimum number of stops for water and fuel call for high capacity Tenders.

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...FROM COAST TO COAST

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Baldwin-Westinghouse diesel-electric locomotives are working side by side with the thousands of Baldwin steam and electric locomotives serving the American railroads.

The high availability, efficiency and economy of Baldwin-Westinghouse diesel-electrics reflect the combined experience of these two pioneer companies.

Baldwin diesel engines, which power these locomotives, embody every worthwhile development in 4-cycle diesel engine practice. They provide maximum accessibility for easy inspection and maintenance under railroad operating conditions.

The Baldwin Locomotive Works, Locomotive & Ordnance Division. Offices: Philadelphia, New York, Chicago, Washington, Boston, Cleveland, St. Louis, San Francisco, Houston.

5TH WAR LOAN

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LOCOMOTIVES

BALDWIN PRODUCTS FOR THE RAILROADS—Steam, diesel-electric and electric locomotives, Diesel engines, Hydraulic presses, Special railroad shop equipment, Testing machines and instruments, Steel tires and rolled steel wheels, Crane wheels, Connecting rods and other steel forgings, Steel castings, Springs, Metal plate fabrication, Boilers, Non-ferrous castings, Bending rolls, Plate planers, Dynamometer cars

THE NATION WHICH THE RAILROADS HELPED TO BUILD

A CONSISTENT SOURCE OF SUPPLY

When George Washington was elected President of United States for the second time, Standard Steel Works, as "Freedom Forge", started on its historic career of service to American industry. Through war emergencies and commercial depressions this company has produced quality steel products for railroads, marine service and general industry. The traditions of this 149-year-old organization give its personnel a wealth of experience and a sense of responsibility that are reflected in the quality of its products. THE BALDWIN LOCOMOTIVE WORKS, STANDARD STEEL WORKS DIVISION, BURNHAM, PA., U. S. A. DISTRICT OFFICES: Philadelphia, New York, Washington, Boston, Cleveland, Chicago, St. Louis, Houston, San Francisco.

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ARMY E NAVY

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STANDARD

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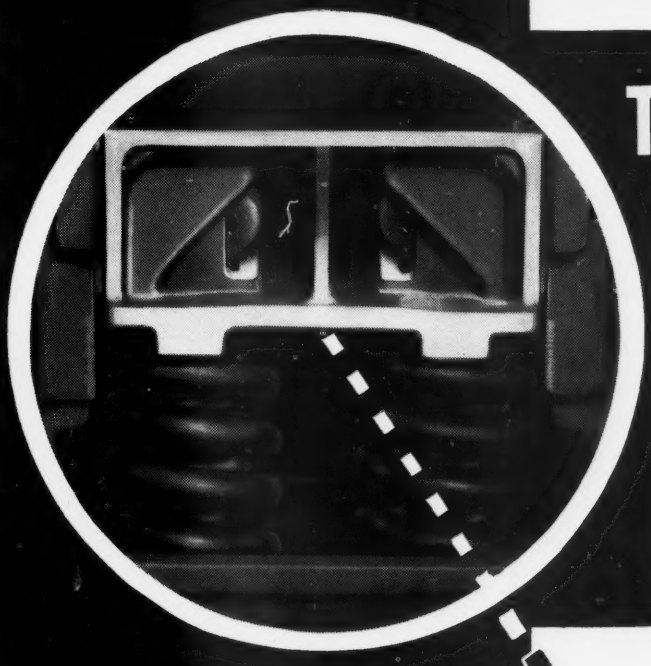

Though it gets freight there FAST—

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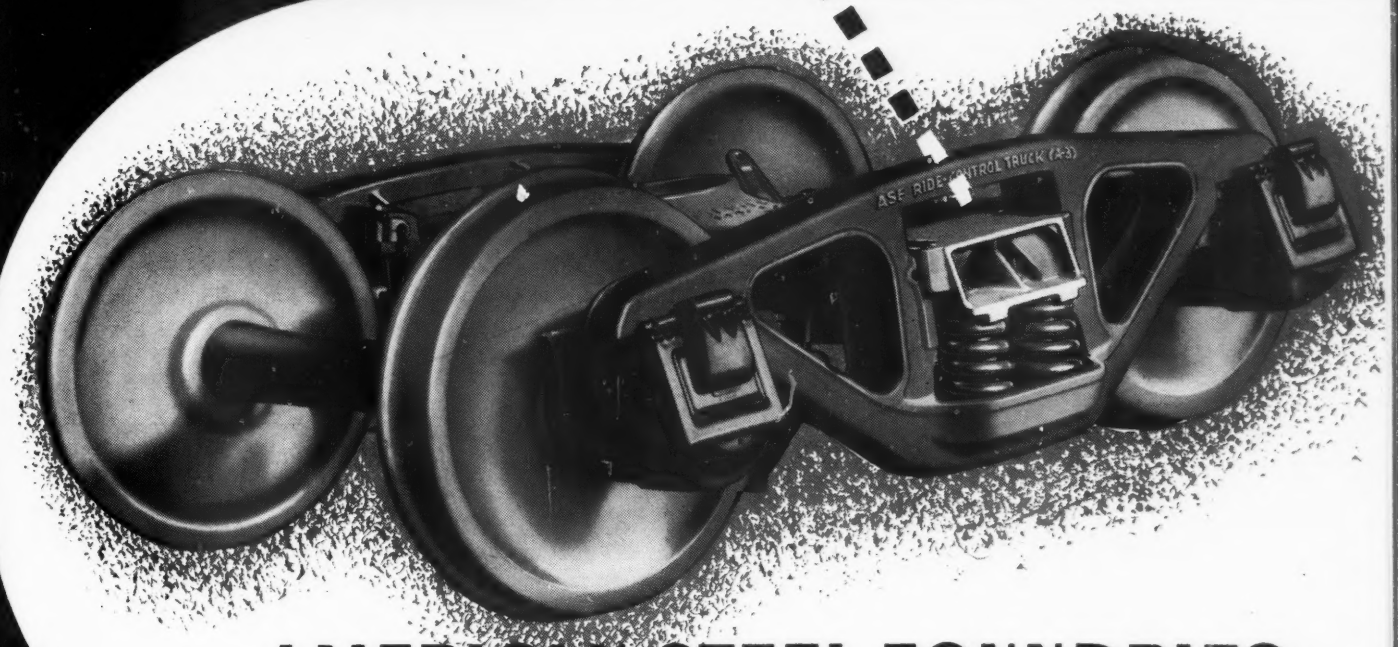
NO SPRING PLATES

NO SPRING PLANKS

THE A. S. F. Ride-Control Truck (A-3) is an easy-riding freight-car truck. And, when employing the long-travel coil springs that permit faster operation, such increases in speed entail no penalty of increased maintenance. For the Ride-Control prevents the development of destructive harmonic oscillation. All bolster motion, both vertically and laterally, is cushioned and controlled by Ride-Control spring pressure . . . the flexible connection that provides smooth, day-in-day-out operation.

Rugged and simple in construction, without spring plates or spring planks, this truck is designed to keep more cars moving, more of the time.



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MINT-MARK OF FINE CAST STEEL

THE TRUCK FOR TODAY'S NEED . . . TOMORROW'S SPEED!

NICKEL AIDS THE AUTOMOTIVE INDUSTRY

to KEEP 'EM ROLLING!

Using ingenuity and "know-how" born of long experience, automotive engineers designed the phenomenally successful transport equipment that now speeds the United Nations on the road to Victory.

Built to take punishment far above peacetime requirements, these specialized military vehicles are being produced in quantity by the mass-production methods that have amazed the world. From North Africa to the South Pacific, these trucks, jeeps, tanks and half-tracks have repeatedly met demands for stepped-up performance.

This kind of engineering-thinking pioneered the application of Nickel alloyed materials. Now, when uninterrupted operation is so vitally important, the widespread use of Nickel is clear evidence of its many advantages.

In steering knuckles or differentials, in forged gears or cast blocks, a little Nickel goes a long way to provide essential dependability. It improves strength/weight ratios, increases wear and corrosion resistance, imparts toughness, and assures uniform properties of the metals with which it is combined.

Today, maintenance crews on far-off battle fronts are learning what metallurgists and engineers here long have known . . . that, properly used, Nickel aids to "keep 'em rolling."

For years the technical staffs of International Nickel have been privileged to cooperate with automotive engineers and production men . . . men whose work is now so necessary to the Nation. Counsel, and printed data about the selection, fabrication and heat treatment of ferrous and non-ferrous metals is available upon request.

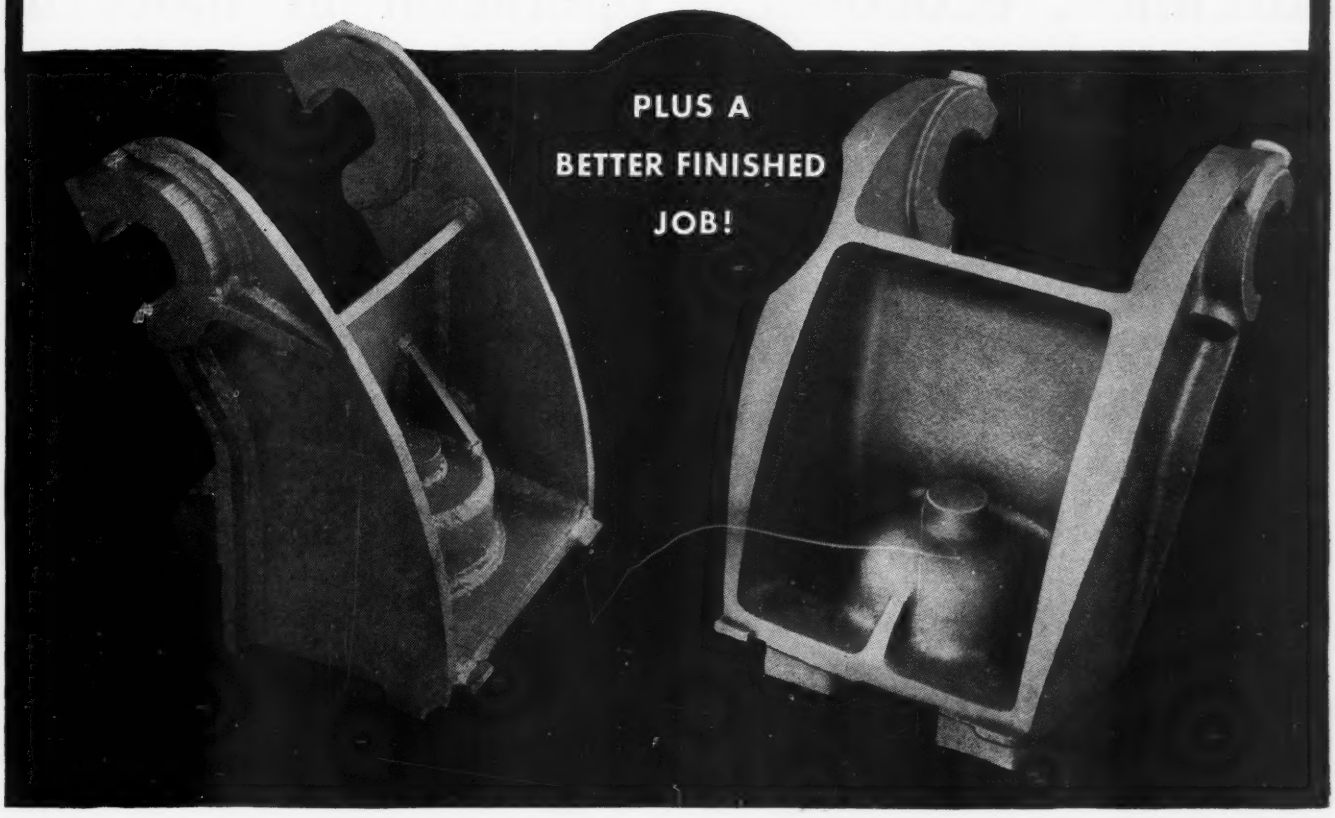
New Catalog Index

New Catalog C makes it easy for you to get Nickel literature. It gives you capsule synopses of booklets and bulletins on a wide variety of subjects — from industrial applications to metallurgical data and working instructions. Why not send for your copy of Catalog C today?

* Nickel *

THE INTERNATIONAL NICKEL COMPANY, INC., *67 Wall St., New York 5, N. Y.*

22 pieces here vs 1 piece here



The cradle at the left is a satisfactory job. It is made up of 22 pieces of steel. Each piece must be cut to size and then all 22 must be joined together to make a single assembly.

At the right is its equivalent, redesigned as a one-piece steel casting. It is an even more satisfactory job in operation, with strength, precision and rigidity.

But, the casting is a one-piece job. Twenty-one fewer pieces to handle! No cutting—no fitting. No jigs required. No assembly cost.

This is a typical example of the cost savings that are being achieved by steel castings, in an almost infinite range of applications.

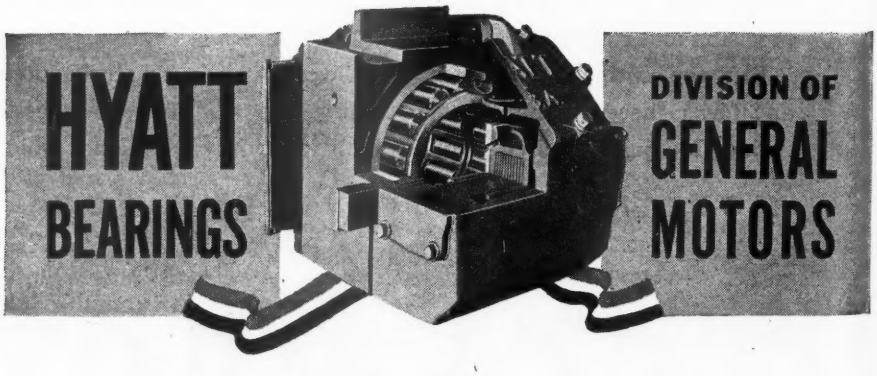
Well worth looking into—this subject of a wider use of steel castings for your product. Here you might find worth-while advantages for the products you are going to put on the market when the "shooting stops."

We suggest you talk it over with your own steel foundry. Or if you prefer, write to Steel Founders' Society, 920 Midland Bldg., Cleveland, Ohio.

MODERNIZE AND IMPROVE YOUR PRODUCT WITH

STEEL CASTINGS

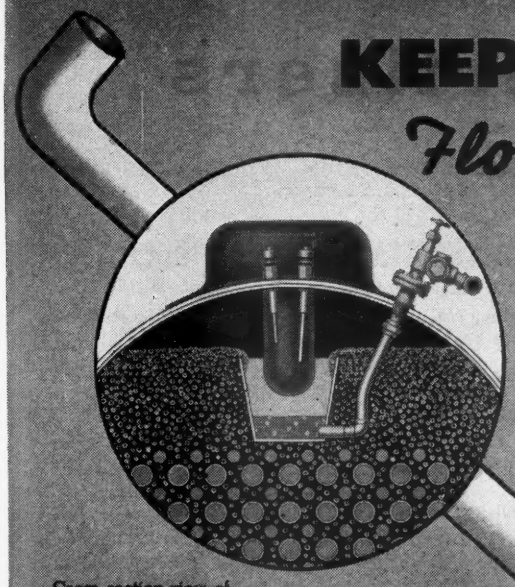
★ ***A Brilliant Record*** for fast, smooth, sustained, economical operation in modern, heavy, high-speed passenger service... *both in the cars and the Diesel locomotives*... is being established by Hyatt Roller Bearing Journal Boxes. Figure what a help this is to railroads handling today's wartime traffic... the greatest in their history!



Cutaway of Hyatt Journal Box as used on modern Electro-Motive Diesel-Electric locomotives

HYATT BEARINGS DIVISION · GENERAL MOTORS CORPORATION · HARRISON, NEW JERSEY

KEEPS ONLY DRY STEAM *Flowing* TO THE DRY-PIPE



Cross-section view of foam-collapsing trough and electrodes installed under steam dome at the dry-pipe.

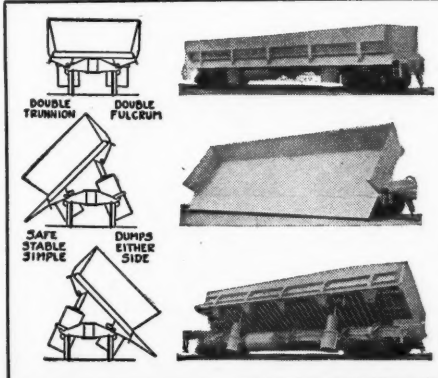
When foam and high water threaten the dry-pipe, the Electromatic Foam Collapsing trough traps them out and maintains an unobstructed channel where steam can flow without entraining foam or water.

Accumulations of foam and water in the trough are automatically blown off. Signal lights in the cab advise the enginemen when the action is taking place and keeps them informed *at all times* of foam and water levels inside the boiler.

Result—clear steam space to the dry-pipe. Blow-down only when water reaches unsafe levels. Write for complete details of the procedure to follow in equipping your locomotive.

ELECTRO-CHEMICAL ENGINEERING CORPORATION
Subsidiary of Dearborn Chemical Company
Dept. T, 310 S. Michigan Ave., Chicago 4, Ill.

Electromatic
FOAM-COLLAPSING
BLOWOFF SYSTEM



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MINE CARS
AND
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FINDLAY, OHIO

GASOLINE – DIESEL

OHIO LOCOMOTIVE CRANES

STEAM – ELECTRIC

The OHIO LOCOMOTIVE CRANE Co. BUCYRUS OHIO

For Index to Advertisers
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It's a down to earth, practical branch of our business. Its results are of benefit to — and available to — all our customers. It's both general, in a broad sense, and very specific in its search for perfection and discovery in individual fields.

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← A report, made over 50 years ago, on Okonite Insulated Cables by English scientists who found Okonite Insulation "excellent."

3676
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● You get uniform, high quality *Certified* Steel when you draw on the large and complete stocks of the nearby Ryerson plant. Prompt shipment assured. Write for Stock List. Joseph T. Ryerson & Son, Inc., Chicago, Milwaukee, St. Louis, Cincinnati, Detroit, Cleveland, Buffalo, Boston, Philadelphia, Jersey City.

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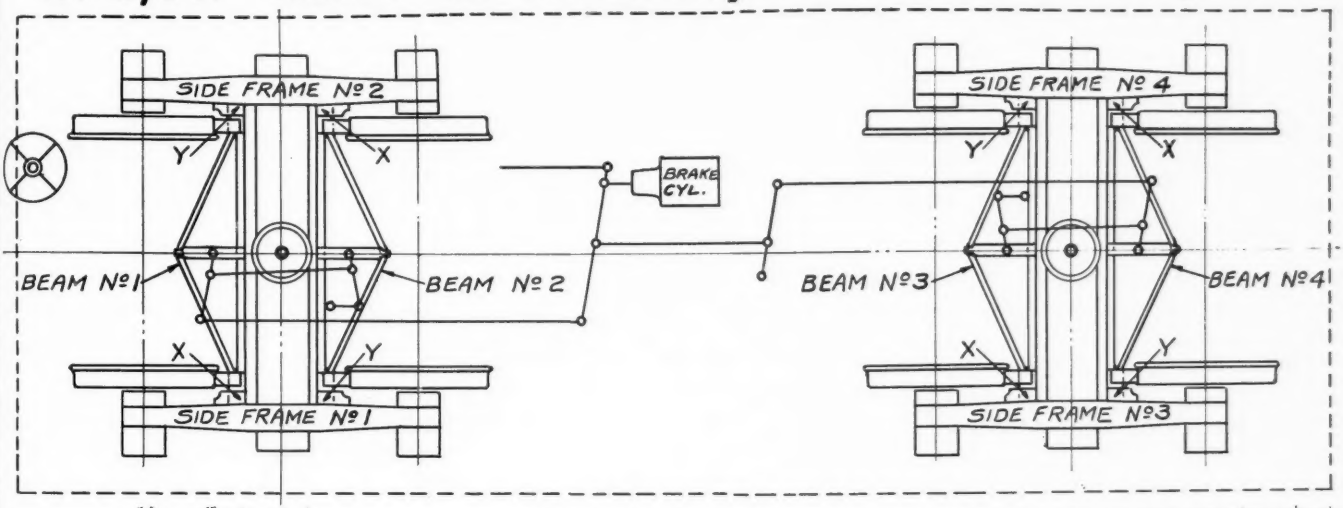
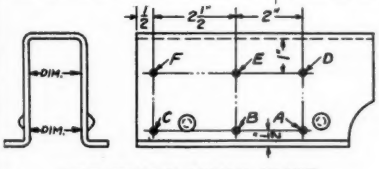
UNIT TRUCK

Report of Accumulated Wear of UNIT PARTS after 573,317 Miles on Auxiliary Water Car 600,120.

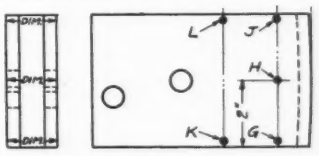




SIDE FRAME WEAR PLATE

Photographs of Parts Will Follow In Subsequent Issues.

Detailed Report Sent upon Request



BRAKE BEAM WEAR PLATE

SIDE FRAME WEAR PLATES — INSIDE DIMENSIONS IN INCHES

SIDE FRAME Nº	LOCATION OF PLATE	AS APPLIED - JULY 8, 1938						INSPECTION - NOV. 1, 1938 MILEAGE 30,750						INSPECTION - NOV. 13, 1939 MILEAGE 97,280						INSPECTION - APR. 25, 1944 MILEAGE 573,317					
		A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F
1	X	1.66	1.67	1.66	1.61	1.62	1.61	1.67	1.69	1.68	1.62	1.64	1.62	1.67	1.69	1.68	1.63	1.64	1.62	1.64	1.69	1.71	1.67	1.67	1.67
	Y	1.68	1.68	1.71	1.61	1.61	1.62	1.67	1.69	1.71	1.61	1.60	1.63	1.67	1.70	1.71	1.61	1.60	1.63	1.47	1.70	1.67	1.53	1.64	1.60
2	X	1.66	1.66	1.68	1.60	1.59	1.61	1.66	1.67	1.67	1.61	1.60	1.62	1.66	1.68	1.67	1.61	1.60	1.62	1.50	1.65	1.63	1.53	1.64	1.63
	Y	1.69	1.69	1.69	1.63	1.63	1.63	1.68	1.68	1.67	1.63	1.63	1.63	1.68	1.68	1.67	1.64	1.63	1.63	1.71	1.73	1.74	1.61	1.63	1.69
3	X	1.65	1.67	1.66	1.60	1.61	1.61	1.68	1.70	1.70	1.61	1.63	1.62	1.68	1.70	1.70	1.61	1.63	1.62	1.79	1.74	1.74	1.73	1.66	1.66
	Y	1.63	1.63	1.63	1.60	1.60	1.58	1.63	1.64	1.63	1.60	1.59	1.58	1.63	1.64	1.64	1.60	1.59	1.59	1.76	1.69	1.68	1.64	1.61	1.60
4	X	1.62	1.63	1.66	1.60	1.60	1.61	1.62	1.64	1.67	1.61	1.61	1.62	1.62	1.64	1.67	1.61	1.61	1.62	1.81	1.75	1.75	1.70	1.66	1.65
	Y	1.66	1.67	1.67	1.61	1.61	1.61	1.67	1.69	1.68	1.61	1.61	1.65	1.67	1.69	1.68	1.61	1.61	1.65	1.79	1.73	1.71	1.66	1.63	1.62

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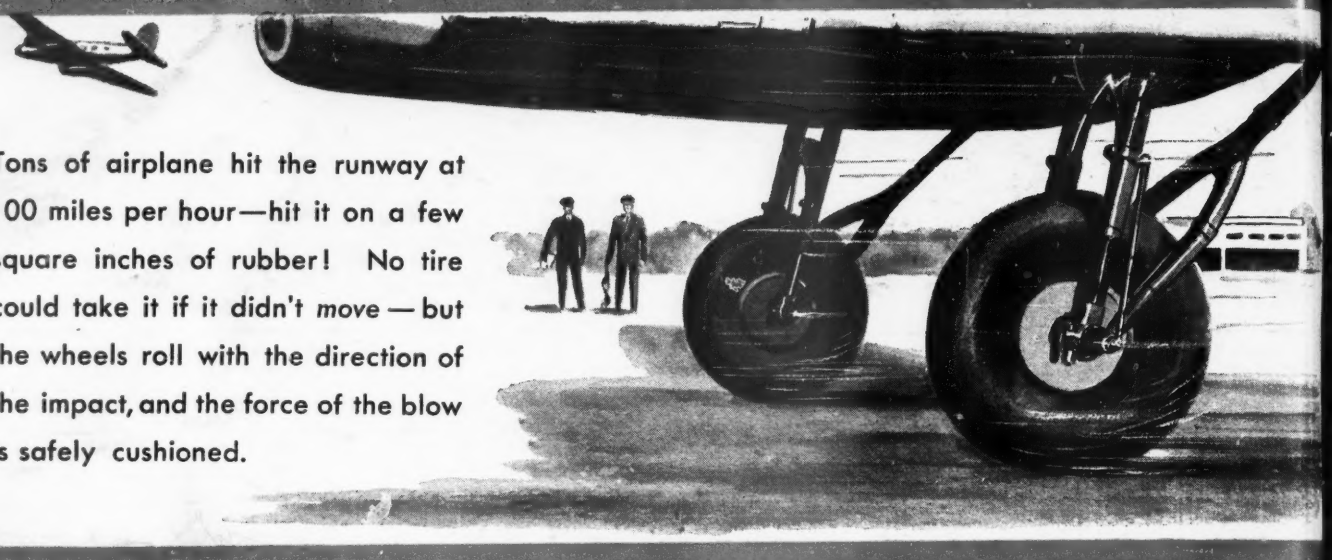
1	X	1.52	1.52	1.53	1.53	1.53	1.46	1.51	1.49	1.53	1.51	1.46	1.50	1.49	1.51	1.49	1.31	1.50	1.48	1.44	1.48
	Y	1.52	1.51	1.51	1.52	1.51	1.47	1.51	1.49	1.52	1.51	1.47	1.51	1.49	1.50	1.51	1.29	1.48	1.46	1.50	1.50
2	X	1.52	1.51	1.51	1.51	1.51	1.46	1.50	1.48	1.51	1.51	1.46	1.49	1.46	1.49	1.50	1.20	1.50	1.38	1.24	1.47
	Y	1.52	1.51	1.52	1.53	1.53	1.46	1.51	1.52	1.53	1.53	1.43	1.50	1.50	1.53	1.53	1.17	1.50	1.39	1.53	1.56
3	X	1.52	1.52	1.52	1.54	1.54	1.45	1.50	1.50	1.49	1.53	1.43	1.50	1.47	1.47	1.53	1.33	1.48	1.42	1.44	1.50
	Y	1.53	1.52	1.52	1.53	1.53	1.48	1.51	1.51	1.53	1.53	1.45	1.51	1.48	1.53	1.53	1.28	1.49	1.44	1.50	1.53
4	X	1.52	1.51	1.52	1.52	1.52	1.51	1.51	1.50	1.52	1.52	1.44	1.51	1.47	1.49	1.52	1.32	1.50	1.43	1.43	1.50
	Y	1.52	1.52	1.52	1.53	1.53	1.46	1.50	1.47	1.49	1.50	1.42	1.50	1.47	1.49	1.50	1.36	1.47	1.47	1.52	1.54

UNIT TRUCK CORPORATION

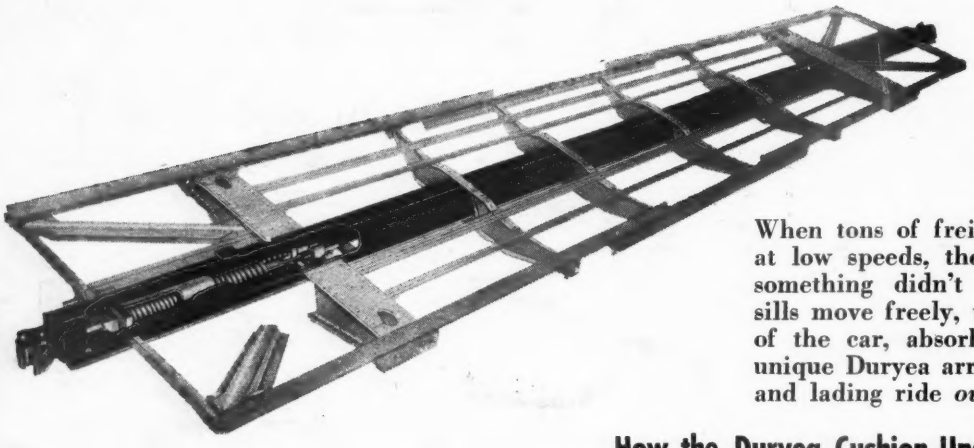
140 CEDAR STREET NEW YORK 6, N. Y.

Why doesn't it tear the tires?



Tons of airplane hit the runway at 100 miles per hour—hit it on a few square inches of rubber! No tire could take it if it didn't *move* — but the wheels roll with the direction of the impact, and the force of the blow is safely cushioned.

MOVEMENT CUSHIONS THE SHOCK! The same principle, in the Duryea Cushion Underframe, gives you SHOCKPROOF SHIPPING



When tons of freight car hit your draft gear, even at low speeds, the punishment would be severe if something didn't *move.* Duryea's floating center sills move freely, travel the shock the entire length of the car, absorbing much of the impact in the unique Duryea arrangement of cushion springs. Car and lading ride *over* the blow in safety.

How the Duryea Cushion Underframe Contributes to Victory

PROTECTS car and lading, prolongs car life, cuts damage claims.

PERMITS higher handling speeds.

ELIMINATES gear replacements maintaining efficiency for life of car.

SAVES TIME loading and unloading. Needs less packing and bracing.

SAVES MONEY usually spent for maintenance on every part of car.

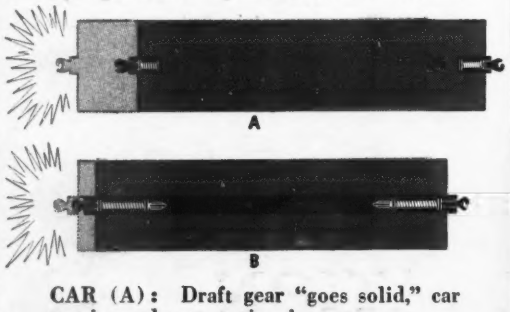
COMPLEMENTS air brake; Duryea cars withstand abrupt stops.

CUTS SLACK to pre-determined ideal.

COSTS NO MORE than conventional type, for average Duryea gear.

Here's what actually happens

. . . when two stationary freight cars receive the same impact, equivalent to a 50-ton car, loaded to capacity, coupling at a speed of 4 m.p.h.: CONVENTIONAL



CAR (A): Draft gear "goes solid," car receives almost entire impact.
DURYEA CAR (B): Shock absorbed by cushion gears, car and lading are comparatively undisturbed.

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DURYEA *Cushion* UNDERFRAME
FOR FREIGHT CARS
The Modern Safeguard For Shockproof Shipping